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JFQ

Flexible Presence

Joint Experimentation

Grenada, Panama, and Haiti

Information Superiority

98/99 Autumn Winter

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. . . our forward presence is a given—
to signal our commitment to our allies
and to give second thoughts to
any disturber of the peace.

—Colin L. Powell

JFQ

A Word from the Chairman

Army Reservists training in Lithuania.

55th Signal Company (Eduardo Quajardo)

a first-class military requires first-rate people

The men and women of the Armed Forces continue their record of achievement in serving the Nation. Whether preserving the peace in Bosnia, providing disaster relief to hurricane victims in Central America, responding decisively in the face of terrorists, or carrying out Operation Desert Fox, they have risen to every challenge.

During the press of ongoing operations it is easy to take for granted the magnificent efforts of our soldiers, sailors, marines, and airmen and lose sight of just how critical they are to national success. Our tanks, ships, and planes are among the best the world, but without men and women trained and ready to operate and maintain them those systems would be of little worth. A first-class military requires first-rate people.

Although usually called an all-volunteer force, our military can better be described as an all-recruited force. While everyone enters the Armed Forces today as a volunteer, they must be attracted to the opportunities service can provide. Wearing the uniform has never been about money or personal gain, and people volunteer for many reasons, but our servicemembers want and

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The cover features *USS Cowpens* with *USNS Yukon* after completing underway replenishment, Southern Watch (U.S. Navy/Dennis A. Narlock). The front inside cover shows SEALs aboard *USS Hampton* during COMPTUEX'98 (U.S. Navy/Michael W. Pendergrass); marine responding to drill on *USS Independence*, Persian Gulf (*USS Independence*/Chris Howell); B–52 undergoing maintenance, Diego Garcia (2d Communications Squadron/Mary Smith); and M2 fighting vehicle, Foal Eagle '98 (1st Combat Camera Squadron/Jim Varhegyi). The table of contents features F–117 taking off from Kuwaiti base (1st Combat Camera Squadron/Greg L. Davis); *USS George Washington* at anchor off St. Thomas harbor, Virgin Islands (*USS George Washington*/Joe Hennessey). The back inside cover captures security patrol at Panmunjom (1st Combat Camera Squadron/Jeffrey Allen). The back cover shows F–15 leaving RAF Lakenheath (48th Communications Squadron/Joseph Lozada); and parade for Cooperative Osprey (2d Marine Division/M.A. Sunderland).

OUT OF JOINT

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deserve a decent standard of living for themselves and their families.

Survey results point to dissatisfaction with the retirement program as a primary cause of recruiting and retention problems. Fixing that program is an urgent priority since the lifetime value of military retirement has declined by as much as 25 percent following reforms in the 1980s that established the High-3 and Redux programs. Two-thirds of the current active duty population is now subject to Redux and will receive 40 percent of their base pay after 20 years instead of the 50 percent enjoyed by those who entered the service prior to 1986.

Moreover, servicemembers will not be provided full consumer price index cost-of-living adjustments like their predecessors. This variance in retirement programs diminishes the value of career service and makes the retirement system a disincentive, leading people to leave the military instead of staying for 20 years or more. As a result, and with the support of both the President and Secretary of Defense, all services are committed to working with Congress to restore the retirement program that provided 50 percent of base pay upon retirement with 20 years of honorable service. The initial response to this proposal by Congress has been heartening.

Competitive pay is the other basic element of a comprehensive compensation package that is needed to retain quality people. The most pressing requirement is to close the pay gap between servicemembers and their civilian counterparts. Although estimates about the size of the gap vary from 8.5 to 13.5 percent, no one denies that it exists or that military pay raises have lagged behind those of workers in the private sector 12 out of the last 16 years. Secretary Cohen has noted that while we will never pay men and women in uniform enough, we can pay them too little—and in my view we do.

Although there has been progress toward reducing the military-civilian pay gap, more must be done. The 3.6 percent raise passed for FY99 prevented this disparity from growing, and the 4.4 percent increase in the FY00 budget will begin to close it. We also have urged a long-overdue reform of basic pay by Congress. Restructured tables would emphasize promotion over longevity as the basis for increases, thereby rewarding superior performance. That would provide enhanced pay raises for mid-career commissioned and noncommissioned officers and help retain outstanding servicemembers. Again, the response from Congress has been positive. We should address the compensation issue quickly and equitably so that military wages remain competitive.

U.S. Marine Corps (Brian Hafenstiner)

Marine recruits, San Diego.

for too long we have done the balancing on the backs of our people

There is no doubt that resources for appropriate compensation compete with modernization and readiness. In light of mounting demands on the Armed Forces and competition for assets, the budget which the President has submitted to Congress boosts defense spending by more than $12 billion in FY00 and around $110 billion over the next six years.

Even with more resources, we will continually be challenged to balance care for our people with investing in modernization and staying operationally ready. For too long, however, we have done the balancing on the backs of our people. If we do not correct this situation, we will risk losing one of the greatest achievements of the last quarter century—the all-volunteer force.

The position of the Secretary and Joint Chiefs is clear: people are both our most precious resource and the key to our future effectiveness and well-being. As we advance our interests around the world and prepare for tomorrow, we cannot lose sight of the importance of taking care of those who serve the Nation in uniform. Through their efforts, and with continued support from the President, Congress, and the American people, we can meet any challenge.

HENRY H. SHELTON
Chairman
of the Joint Chiefs of Staff

Letters . . .

THE HISTORICAL RECORD

To the Editor—Richard Hallion argued in his letter to the editor (see *JFQ,* Spring 98) that problems faced by the fleet air arm of the Royal Navy in 1939–40 were not the fault of the Royal Air Force. While I believe he is wrong, I won't debate the historical particulars here. But I would raise one point on this debate that has import for both the present and future of aviation.

Did the RAF provide effective close air support to British forces on the ground in France in 1940? *No.* Did the RAF defend the skies over England during the German attacks in 1940? *Yes.* Did it provide enough pilots to carriers before their transfer to the Royal Navy in 1938? *No.* Did RAF Coastal Command defeat the German submarine blockade of 1939–40? *No.* Did RAF heavy bombers force Germany to surrender? *No.* Did the RAF effectively defend Singapore and Burma against Japanese attacks in 1942? *No.* Did it develop jet turbine technology and field it before the war ended? *Yes.* Did RAF heavy bombers attack Germany throughout the war? *Yes.*

That is a mixed record. But given resource constraints in the decade prior to World War II it is not bad. In fact, as Hallion pointed out, the RAF cultivated one of the finest aircraft industries in the world even with the tight budgets of the 1930s. But that isn't the point. What matters is not what the RAF did but what its leaders said it would do. Its champions had claimed before the war that the heavy bomber would be the war-winning weapon. RAF squadrons would make great land and sea campaigns unnecessary. Like Hallion, the RAF leadership alleged that ground and naval forces were backward, which kept them from appreciating the potential of massed air forces.

Yet what did RAF officers who visited the United States in 1940 on a secret mission want? They asked for the Norden bombsight so that their high altitude bombers could hit what they were already supposed to be able to hit. Here was a service claiming it had the key to winning the war but couldn't accurately hit targets with its high altitude bombers. The RAF was simply not telling the truth about its capabilities. It was deceiving itself and its sister services.

There's a lesson here: don't lie to yourself. Don't huff and puff about how your service or specialty can win wars by itself. Once you start down that road you will never admit that you have made—or could make—a mistake. If your inflated promises don't come true you will blame some other service. Listen to yourself talk then. You'll hear "The other guys had the wrong culture." Just like the RAF said before World War II. Just like Richard Hallion said in his letter.

—Thomas C. Hone
Industrial College of the Armed Forces

JT&E RESULTS

To the Editor—Your recent article on "Joint Combat Search and Rescue—Operational Necessity or Afterthought" (*JFQ,* Spring 1998) accurately depicts the increasing interest in and emphasis on JCSAR and the area of personnel recovery at the highest levels within DOD. In December 1995, the Office of the Secretary of Defense launched a three-year effort to assess JCSAR capabilities and identify and test proposed enhancements. JCSAR JT&E documentation is available by contacting the program management office: JT&E Library, ATTN: Ms. Hegel-Huhn, 2001 North Beauregard Street (Suite 800), Alexandria, Virginia 22311, or via e-mail at hegell@acq.osd.mil, or by calling (703) 578–6567.

—Colonel Kenneth C. Stanley, Jr., USAF
JCSAR Joint Test & Evaluation
Nellis Air Force Base

Norwegian and U.S. forces during Operation Joint Guard.

DOD (Sean M. Worrell)

Flexible Presence in the 21st Century

By D. SEAN BARNETT *and* JAMES S. THOMASON

DATELINE WASHINGTON: Sometime in 2001. . . . *The strongman ruler of neighboring Sylvania threatened Freedonia, stating his intention to "protect ethnic Sylvanians." U.S. satellites detected a buildup of Sylvanian forces along Freedonia's border. In March the President dispatched a carrier battlegroup to the coast of Africa to deter an invasion of the fledgling democracy. The carrier embarked an air wing and a Marine detachment with helicopter lift. Overflights of the border by naval aircraft made the U.S. presence visible. Those actions and a presidential declaration that America would not tolerate the resolution of territorial disputes by force deterred Sylvania from attacking.*

But by June the simmering crisis boiled over. While containing an anti-government protest, Freedonian police killed two ethnic Sylvanians, which led to escalating violence. Incorrectly believing that Freedonia would not request assistance from Washington in the face of such unrest, the Sylvanian leader ordered an attack.

After discussions with the Freedonian government, the President decided to provide air support. Drawing on a contingency plan formulated with host nation military, naval air began striking Sylvanian forces. The Marine detachment deployed ashore to reinforce security at the American embassy and help diplomatic personnel locate and evacuate some 500 U.S. citizens from Freedonia. In the continental United States (CONUS), Air Force bombers and a brigade of the 82d Airborne were placed on alert to back the battlegroup.

D. Sean Barnett is a member of the law firm of Shaw, Pittman, Potts and Towbridge; James S. Thomason is an analyst with the Institute for Defense Analyses.

Shortly after the invasion, enemies of the Freedonian government, with the support of Sylvanian agents, attempted a coup d'état. Rebel military forces attacked the airport and other key installations in the Freedonian capital. With the turmoil threatening U.S. citizens and preventing their evacuation, the President decided to seize the airport. Elements of the 82d Airborne, flown from the United States, landed nearby and secured the area. Resistance was light and disorganized because most rebels were engaged fighting the government. When the airport was taken, Air Force transports lifted in Army reinforcements. The evacuation resumed. Then, with Navy air strikes hammering the lead Sylvanian invaders and Army forces in the Freedonian capital, the Sylvanian strongman halted his attack and began to withdraw.

By July Freedonia was no longer militarily in danger. A flexible joint presence tailored to the situation had initially deterred hostile action. When that failed, U.S. forces responded to terminate the crisis.

This article discusses why flexible presence should be our guiding strategic concept for the 21st century, then explores its objectives within the context of the national security strategy and how presence operations can achieve them. It concludes that CINCs and the Joint Staff planners should focus on conducting operations by employing situationally tailored force packages. Specifically, they should rely more heavily on air-lifted, land-based forces and break the Navy and Marine Corps out of their strict schedule of deployments to traditional areas of responsibility.[1]

global engagement uses overseas presence to enhance security and promote prosperity at home and democracy abroad

Overseas Military Presence

The definition of overseas military presence includes any military assets located or engaged abroad in noncombat operations. It is critical for three reasons. First, it promotes national security objectives. As General Shalikashvili noted in *Joint Vision 2010*, "power projection, enabled by overseas presence, will likely remain the fundamental strategic concept of our future force." Or as General Powell put it earlier:

Our forward presence is a given—to signal our commitment to our allies and to give second thoughts to any disturber of the peace. . . . Economic power is essential; political and diplomatic skills are needed; the power of our beliefs and values is fundamental to any success we might achieve; but the presence of our arms to buttress these other elements is as critical to us as the freedom we so adore.[2]

Second, our national security strategy has changed with the end of the Cold War. The old strategy required extensive assets deployed overseas in key theaters to contain the Soviet Union. But the new one of global engagement uses overseas presence to enhance security and promote prosperity at home and democracy abroad, to be advanced through the three instrumentalities of shaping, responding, and preparing. Thus it should be determined whether we still need overseas presence and, if so, how we should provide it.

Third, procuring capabilities for presence, and operating and supporting them overseas, is expensive. We have too many interests and too few resources to be everywhere at once. In this day of tight budgets and shrinking force structure, where force presence is needed we should provide it as efficiently as possible.

Based on the national security strategy, the Joint Staff lists the objectives of overseas military presence as peacetime engagement, deterrence, and crisis response. These follow from the objectives of our national military strategy: promoting stability through regional cooperation and constructive interaction and thwarting aggression through deterrence and maintaining warfighting capabilities.

Peacetime engagement includes interactions between the Armed Forces and foreign militaries: visits, exercises, contingency planning, host nation support, and humanitarian operations. According to the Secretary of Defense, it is intended to "influence events abroad that can affect the well-being of Americans."[3] And as General Shalikashvili stated in *JV 2010*, it confirms our commitments, strengthens capabilities, and enhances coalitions and multinational operations. According to the national military strategy, it also reinforces regional stability, relieves human suffering, and promotes democratic ideals.

Deterrence works by convincing potential aggressors that the costs of their acts will outweigh the benefits. It thus rests upon actors perceiving that we have both the capability and will to punish them. Different kinds of forces (ground, naval, or air) operating from different locations (in theater ashore, theater at sea, or the United States) differ in deterrent effects. The capability to punish is an inherent property of forces. But both the level and kind of punishment must be tailored to the parties concerned. Different punishments deter different parties.

Potential actors must believe that we are willing to use force. In the past, the perception that we would not has caused deterrence to fail, as when Iraq invaded Kuwait in 1990. Our *actual* willingness to act will depend on how important an interest is to us and its probable cost in friendly losses and collateral damage. Even during

U.S. Air Force (Craige Kiziukiewicz)

Jordanian and U.S. aircraft during Air Expeditionary Force II.

the Gulf War, fear of inflicting excessive collateral damage shaped the use of airpower. Enemy *perception* of our willingness, on the other hand, may depend on the visibility of our forces in theater and our prior conduct. In Somalia, General Aideed attacked U.S. forces because he believed, on the basis of Vietnam and Lebanon, that we were not willing to accept casualties.

Crisis Response—the restoration of stability—is usually required where deterrence fails. However, it can also involve rapid deployments for deterrence, noncombatant evacuations, or humanitarian relief. Recent examples include Operations Vigilant Warrior (Iraq, October 1994) and relief efforts related to Hurricane Mitch.[4] Overseas forces have historically been the first to respond to crises, although forces in the United States can back them up and in the future may even precede them on the scene.

Output-Oriented Measures

When considering how to achieve the objectives of presence, planners should think about force capabilities and the tasks to be performed—the output of presence—rather than the forces per se—the input. Moreover, they should not feel bound by tradition. Shalikashvili suggested a more integrated means of providing presence:

> *When you project power and you would like to keep an aircraft carrier forward deployed to be ready for the unexpected, is it really necessary to do that all the time? Or is it possible, in some theaters, during the time that you don't have the carrier, to forward deploy certain ground-based air together with some marines or ranger type units? You might wish to supplement with some bombers on alert or forward deployed so you can create the effect on the ground, if need be, that is identical to the one the carrier would project. And so all of a sudden you say to yourself, "Maybe I don't need to deploy the same capability all the time. Maybe I can build my forward presence around an Aegis cruiser and the air piece I forward deploy and put on the ground."*[5]

The following suggests the capabilities best suited for achieving goals of presence.

Peacetime Engagement. To assess the military activities most effective for peacetime engagement, we interviewed some fifty senior military and diplomatic officials. The overwhelming consensus was that actual interaction—dialogue,

Operation Assured Response, Liberia.

2d Marine Division, Combat Camera (A. Olguin)

55th Signal Company (Jean-Marc S. Schaible)

Egyptian vehicles exiting U.S. landing craft, Bright Star '98.

visits, exercises, etc., not just being in or flying over an area—is the key. Furthermore, forces physically present have a psychological influence over regional leaders that forces in the United States do not, regardless of how capable and deployable they might be. In addition, *continuous* military-to-military engagement, rather than a few large exercises and deployments, was seen as particularly important to building coalitions, maintaining communications within them, increasing the interoperability of American and allied forces, and making foreign nations more comfortable with a U.S. presence. It was also seen as particularly effective in teaching officers from emerging democracies about civilian control of the military and human rights. Peacetime engagement is most effective with U.S. forces based in an area, although a large presence may clash with local cultures, and American bases and personnel are vulnerable to attack, as seen at Khobar Towers in Saudi Arabia.

Deterrence. Many potential enemies with varied values, strengths, and weaknesses confront planners seeking to deter hostile acts under a wide range of circumstances. Accordingly, no combination of forces and basing is the optimal deterrent in all situations. Moreover, political limitations on basing may prevent us from putting the ideal deterrent in place. We must therefore remain flexible.

If our objective is to prevent a direct attack on an ally, a land-based presence with significant combat capability is probably most effective. If the threat is not as grave, a tripwire force with the promise of rapid reinforcement from regional bases or CONUS may be sufficient. Deterring action without interposing U.S. forces between an enemy and its objective is more difficult. A punitive or retaliatory strategy does have the advantage of being executable by land-based or maritime forces present in a region or deployed from

1st Combat Camera Squadron (James Mossman)

Training area near Tongduchon, South Korea.

the United States. But such a strategy can be effective only if we credibly threaten or—once an enemy acts—attack targets whose value is at least equal to the objective we aim to protect. In carrying out a punitive strategy we must not assume that enemies share American values and will react to our deterrent actions as we would. Acquiring in-depth knowledge of enemy political and social cultures is vital.

Location of our forces may influence an enemy's view of our willingness to use force. Troops ashore, because we will not abandon them in a crisis yet may not be able to rapidly remove them, reveal a stronger inclination to use force and more commitment to our objective. But those in the United States, because they can go practically anywhere or not go at all, and are invisible to distant parties, indicate less commitment.[6] Those afloat, because they are nearby but can easily steam away, fall in between.

a strategy can be effective only if we threaten or attack targets whose value is at least equal to the objective we aim to protect

The kinds of assets we use may affect the cost and thus our willingness to employ them. Airpower may cause fewer friendly casualties but more collateral damage. Ground elements, particularly light infantry, may bring more casualties but less collateral damage. A combined arms force, however, or one of largely one type backed by other types from outside the theater, appears to be the best option because it gives commanders a powerful set of capabilities to convince enemies we would use force.

Crisis Response. All services today have assets useful for crisis response. Forces can also deploy from CONUS rapidly, so commanders now have more basing options. To get the most from our resources, crisis response plans should reflect all the forces' capabilities and potential basing and deployment modes in conjunction with their tasks.

Today's commanders can deploy Navy and Marine aircraft by sea, send Air Force fighter wings and Army attack helicopters to bases in theater by air, and employ Air Force bombers directly from the United States. They can deploy Marine ground forces by sea and Army forces by air (in some cases straight from CONUS). These options extend our presence reach even with a smaller force structure. They also help overcome political obstacles to base access.

Current capabilities permit commanders to combine forces in nontraditional ways. In our scenario, a carrier battlegroup (CVBG) embarked an air wing and a Marine infantry detachment

and was reinforced by Army airborne and airlanding forces lifted by Air Force transports. In 1996 an amphibious ready group (ARG) off the coast of Liberia backed up Special Operations Forces evacuating noncombatants ashore. In Southwest Asia, we have a carrier battlegroup deployed regularly to the Indian Ocean, Air Force squadrons rotated to bases in theater, and Air Force bombers can attack targets directly from the United States.

Basing and deployment alternatives are important considerations in selecting forces to perform different military functions in various regions during crises because of their impact on force response times. Because we can deploy to overseas bases faster today, commanders have more crisis response options. Alternatively, considering all the forces that might perform different functions in different regions and how long maritime or land-based elements deployed by air or operating from CONUS might take to arrive and begin operations allows planners to judge the value of bases in theater in the first place.

One can also draw general principles from such assessments.[7] Air-deployed land-based forces will generally respond faster than maritime forces if the United States has timely access to a base in theater and the maritime forces are farther than two steaming days away. For example, a tactical fighter wing can deploy to Saudi Arabia faster than a CVBG can steam from the eastern Mediterranean to the Persian Gulf. Base access is unnecessary if land-based forces can perform a function directly from the United States. But without it, and if the function cannot be performed from CONUS, maritime forces are needed. These principles reinforce the notion that all services can contribute to rapid crisis response and that planners should consider nontraditional options to get the most from overseas presence and projection capabilities.

Flexible Presence

The post-Cold War national security strategy of global engagement, service capabilities to conduct operations around the world, and the need to get the most from our forces in times of scarce resources imply that we should conduct presence operations differently. First, CINCs and Joint Staff planners should think globally about where presence might best support our strategy. Second, they should consider all our capabilities and plan presence operations using situationally tailored force packages to maximize our presence reach. Third, they should rely more on air-lifted land-based forces to conduct presence missions. Fourth, in accordance with thinking globally, they should break the Navy and the Marine Corps out of their schedules of deployments to traditional areas of responsibility. Navy and Marine deployments should be flexible—part of the tailored force packages wherever required to achieve the objectives of presence. Finally, when thinking about deterrence planners should focus on the Navy and the Marine Corps, backed by rapidly air-deployable troops in the United States. They should exploit the abilities of maritime forces to loiter near a developing crisis to prevent it from boiling over without need for base access.

Reflecting its increasingly global interests, the United States is conducting more military presence operations. In the 21st century planners should look for opportunities around the world to further the new national security strategy, which aims to promote security, prosperity at home, and democracy abroad. By promoting stability—through peacetime engagement, deterrence, and crisis response capability—presence promotes all three strategy objectives.

Joint task-oriented deployments can help the United States use its forces most efficiently. Thinking joint and combined allows all the services to bear the heavy burden of presence. Tailoring forces for the task at hand minimizes risk without unduly drawing assets from other operations.

Today's land-based elements, ground and air, are more transportable than ever, and the United States possesses considerable airlift to deploy and sustain them.[8] Land-based forces transported by air can perform many of the functions of maritime forces. With base access and logistical support, air-deployed forces can reach distant theaters faster than maritime forces that are not already deployed relatively close by. Thus, CINCs and planners should rely on air-deployed forces more heavily. Base access is important for responding to crises with air deployed forces, but in the past fifteen years we have rarely been completely shut out of a theater of concern.[9]

Timeliness of base access is also important in that we may wish to deploy forces before our regional allies perceive that a crisis requires a U.S. response. Where we anticipate difficulty obtaining access, a maritime response may be best. Nevertheless, we believe our capability to deploy land-based forces by air remains underutilized in deterrence and crisis response planning. Greater reliance on air-transported assets will both increase our ability to provide presence and free maritime elements to perform missions that land-based forces cannot (providing offshore presence where base access is unavailable or performing distinctly naval missions). In the current environment where our maritime forces are deployed nearly to their maximum, greater reliance on air-transported land-based forces makes sense.

DOD (Richard M. Hellerman)

Evacuees from Liberia arriving in Sierra Leone.

1st Combat Camera Squadron (Efrain Gonzalez)

B–52s after mission over Iraq, Operation Desert Strike.

Deployment Schedules

The CINCs and Joint Staff would increase the flexibility of U.S. presence if they broke the Navy and Marine Corps out of their schedules of deployments of CVBGs and ARGs to the three traditional areas of responsibility (AORs): the Mediterranean Sea, Indian Ocean, and Western Pacific. The scheduled deployments tie up assets such that any global deployments outside the AORs would likely violate Navy personnel or operational tempo limitations. The scheduled deployments are also inefficient when they include more force or different capabilities than are needed in theater or for too long. Not every situation calls for a CVBG or an ARG.

deploying maritime assets globally and flexibly achieves economy of force

Deploying maritime assets globally and flexibly achieves economy of force. It permits use of unique qualities of maritime elements to greatest advantage. These include the ability to carry out naval missions like blockades and antisubmarine warfare and to remain at sea, free from political constraints (such as difficulty obtaining base access), yet influence events ashore.

Finally, flexible maritime deployments need not leave the Nation vulnerable in the AORs. We achieve peacetime engagement and deterrence by demonstrating commitment, not through slavish adherence to a deployment schedule. Moreover, we have substantial land-based capabilities in Europe, Korea, and Southwest Asia and can reinforce them from the United States. Additionally, frequent but unscheduled deployments may better signal displeasure to enemies. For instance, the operation of one CVBG in the Western Pacific is not extraordinary—it is always there—but the deployment of two near the Taiwan Strait in 1996 conveyed our concern over Chinese exercises and intentions toward Taiwan.

Because maritime forces can loiter offshore free from political constraints or base requirements, the Navy and Marine Corps, backed by air-deployable land-based assets in the United

States, may be particularly suited to presence missions oriented on deterrence. Maritime forces possess a variety of capabilities to punish. They range in visibility from being completely over the horizon to present ashore. And the United States has shown its willingness to use force from the sea. Thus maritime capabilities on the scene may be more credible than purely CONUS-based assets. They might also move in and defuse a crisis before the United States can obtain base access in theater and deploy land-based forces.

The Navy and the Marines, however, need not be everywhere at once, nor need the same units go to the same regions repeatedly. At times deterrence requires the striking power of a CVBG. At others it calls for amphibious power to control events ashore. At still others it demands the multiple capabilities of a combined arms task group.

Finally, each task group deployed to deter need not be large enough to handle all possible threats. Rapidly air-deployable land-based forces can serve as powerful backup to a maritime task group. If conflict erupts in spite of the maritime presence, as in our scenario, we could more readily obtain base access in theater and deploy land-based forces to respond. Even without access, Air Force bombers or Army airborne elements could provide backup directly from the United States. B–2s flying directly from CONUS recently conducted strikes in the former Yugoslavia. Using assets from CONUS to back maritime forces increases the flexibility of the Navy and Marine Corps to conduct in such operations. It thereby extends the reach of U.S. deterrence and furthers the goals of overseas presence.

Flexible presence—joint, task-oriented deployments to accomplish objectives using small forces forward backed by larger units from the United States—should be the guiding concept for operations in the 21st century. It will maximize the utility of the Armed Forces for presence and enable the Nation to pursue its national security strategy around the world even without the resources to be everywhere at once. **JFQ**

NOTES

[1] The authors researched overseas military presence for both the Commission on Roles and Missions of the Armed Forces and the Office of the Secretary of Defense. See James S. Thomason et al., *Presence Analyses for the Commission on Roles and Missions of the Armed Forces* (Alexandria, Va.: Institute for Defense Analyses, April 1995); *IDA Analyses of Overseas Presence for the Commission on Roles and Missions* (Alexandria, Va.: Institute for Defense Analyses, June 1995); *Evolving Service Roles in Presence Missions* (Alexandria, Va.: Institute for Defense Analyses, August 1995); *Flexible Presence: A Concept for the 21st Century*, 65th Symposium of the Military Operations Research Society, June 1997.

[2] Colin L. Powell, "U.S. Forces: Challenges Ahead," *Foreign Affairs*, vol. 71, no. 5 (Winter 1992–93), p. 36.

[3] Secretary of Defense, *Annual Report to the President and the Congress*, March 1996, p. 2.

[4] Ibid., p. 266.

[5] John M. Shalikashvili, "Readiness: It's a Balancing Act," *Air Force Times*, January 2, 1995.

[6] The United States may be able to make CONUS-based forces more visible, for example, by allowing CNN to broadcast images of the 82d Airborne preparing to deploy.

[7] In an earlier work, from which these principles are drawn, the authors considered three regions (Mediterranean, Indian Ocean, and Western Pacific) and notional functions (emplacing an air wing in major regional contingency, noncombatant evacuation, humanitarian assistance, air defense, and strikes against short-term visible targets, point targets, and area targets). See Thomason et al., *Presence Analyses*, appendix C–2.

[8] See, for example, William E. Odom, "Transforming the Military," *Foreign Affairs*, vol. 76, no. 4 (July/August 1997), pp. 56–58.

[9] See Thomason et al., *Presence Analyses*, pp. D–4–1 to D–4–3.

M2 Bradley during field experiment.

55th Signal Company (Aaron Robert Kughen)

Joint Experimentation: A Necessity for Future War

By MARK A. JOHNSTONE, STEPHEN A. FERRANDO, *and* ROBERT W. CRITCHLOW

We are told that necessity is the mother of invention. But invention can be the mother of necessity when it comes to military adaptation to technological advances. New technologies in the hands of an enemy may require either adjustment or accepting defeat. They can also generate political pressure for adoption and innovation. Due to the demands of the information revolution and the goals set forth in *Joint Vision 2010*, the U.S. military again confronts the need to adapt.

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Innovation requires adjustment not only in technology but in doctrine and organization. History presents examples of test-bed units that became templates for the future. Today a joint experimentation organization could provide a technique for minimizing overlap and interservice rivalry, sharing ideas, and developing the force to fulfill *JV 2010*.

Three options are at work or under consideration. First, some services have established their own "battlelabs" to test technologies and concepts. Second, the Secretary of Defense has designated U.S. Atlantic Command (ACOM) the executive agent for joint experimentation. Third, Senator Dan Coats and others have proposed a separate unified command for experimentation and doctrine development. Given current resource constraints, the ACOM solution is the most prudent first step in experimenting with future concepts.

55th Signal Company (Russell J. Good)

High mobility artillery rocket system.

The Imperative for Innovation

The driving force behind today's call for military change is as common as beach sand: silicon. Whether or not the microchip and associated communications technologies have produced a revolution in military affairs (RMA) to which the Armed Forces must respond, the mandate for adaptation remains. *JV 2010* identifies information superiority as the key enabler behind leaner but more lethal forces. It will empower the military to react more quickly and cohesively, reduce the "fog of war," and allow friendly forces to disrupt enemy command and control.

Arthur Cebrowski and John Garstka depict how these information capabilities might combine to produce a synergy in their concept of "network-centric warfare". The joint force is interconnected through an information grid that provides the command and control back-plane that links all forces. Sensor grids use the information grid to feed targeting information to engagement grids. These grids then strike with precision and lethality more quickly than the enemy can react. Individual high value platforms, and thus individual service-specific competencies, become less critical on their own merit. The vital factor is the ability of sensors and shooters to interact quickly across the joint force, exploit information, and act in a highly synergistic fashion to produce maximum combat power.[1] The move to a force based on information superiority must also consider the integration of technology with the human factor, such as the risk of overloading future operators.

experimentation will reduce guesswork, and a broad approach that requires consensus building will minimize the risk

The problem that emerges is how to promote innovations that require change across service boundaries and competencies. A recent draft RAND Corporation report notes that the timeframe is an important factor. Near-term *era A* adaptation represents *evolution* of current service competencies and technologies and *era B* innovation posits a complete revolution in military doctrine, organization, and technology that fundamentally alters the way war is fought. Era A starts now and stretches to around the year 2010. It looks to the near and mid-term threats and uses existing technology to reduce present vulnerabilities. Exploiting emerging technology to minimize existing threats will enable reengineering the force to reduce personnel levels and costs while increasing capabilities. Essentially, we must effect greater lethality and power projection by blending emerging technology with a smaller, more deadly force. Era A changes fall within the purview of the services.[2]

Era B looks to *revolutionary* change in warfare beyond 2010. Due to the nature of new threats, era B should include experimentation with exotic concepts. Ideas such as speed-of-light theater missile defense, submarines with embarked land-attack capabilities, or space and unmanned aircraft are just some avenues to explore. The key distinction is that era B will present some threats that cannot currently be envisioned. That will call for hedging—cultivating organizations and specially skilled people to develop exotic concepts that could someday reorder service functions.

Looking at RMA in two separate but overlapping eras illuminates two points. First, the transformation of U.S. forces needs to be gradual but steady. It is not a path to recklessly charge down. Finding ways to use existing technology to defeat the near- and mid-term threats will take the collective effort by all the services with a single joint point of contact. Capitalizing on expertise in their specific roles and missions gives the services a vested interest and will ensure that quality advancements are not sacrificed for swift change.

Second, continued evolution of the force through era B will require testing a broad array of ideas and hedging on future needs. Experimentation will reduce guesswork, and a broad approach that requires consensus building will minimize the risk. Under this approach, we must sacrifice some efficiency for security. It is better to be slightly wrong in a number of overlapping

choices than to be vastly wrong about a single overarching technological bet.

Preparing for both eras A and B can cause friction in a resource-constrained environment. Choosing one or the other sacrifices near-term readiness or future capability. The national military strategy directs the services to "prepare now" to exploit RMA and maintain military superiority into the future. If "prepare now" is one of three major pillars of the national military strategy, it should receive commensurate resources. However, the services lack the capacity to prepare for both the near and long term and they are struggling with how to spend their limited money. Attention could be focused on present deficiencies solvable within the future years defense plan timeframe. Alternatively, funds could go to capabilities identified as essential in *JV 2010* or to concepts far beyond 2010.

At the same time caution is in order. The process of change must be deliberate and thoughtful. The United States must not search so aggressively for the "military after next" that it sacrifices its lead and endangers readiness during the transition.

Doctrinal development and organizational adaptation—which may threaten bureaucracies, traditions, and prerogatives—must accompany changes in technology for a military to fully realize the combat potential of new weapon systems. For example, in the 1870s the French military had the advantage of a precursor to the machine gun in their war against the Prussians, the Gatling-like *Mitrailleuse*. However, because it rode on a carriage like a cannon it was placed with the artillery rather than up with the infantry where it would have been able to better support combined arms operations. French organization had not adapted to new technology to its best advantage. In 1940, France had better tanks with larger guns and armor thicker than opposing German *Panzers* but limited their effectiveness by tying them to infantry support.

Test-Beds as Seed Beds

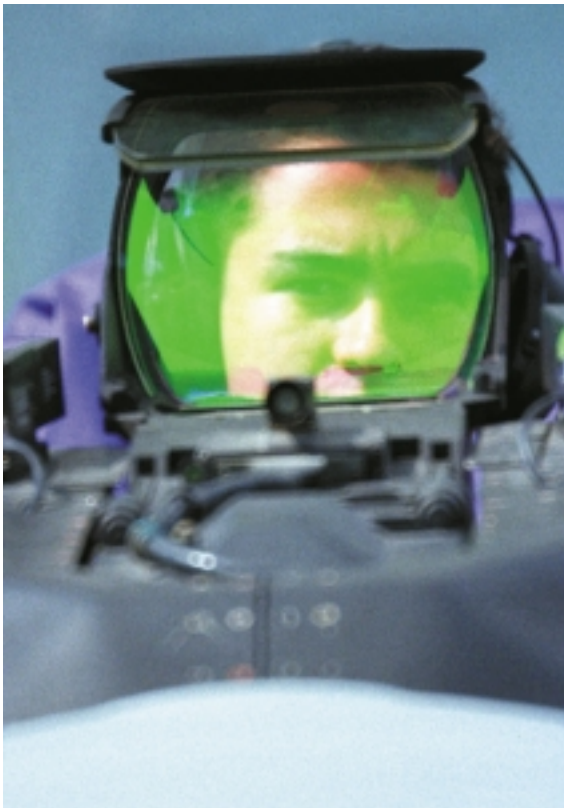
How can the Armed Forces prod doctrinal, organizational, and technological innovation to change how it fights? Historical examples of successful innovation point to dedicated test-bed organizations that provide a venue for integrating technology into the force, developing supporting organizations, and creating implementation doctrine in a forum that provides verification of ideas and mitigates the impact of wildcat schemes on the rest of the force.

The classic case of such test-beds is the integration of tanks and development of *Blitzkrieg* doctrine by General Heinz Guderian in the *Wehrmacht* before World War II. As early as 1928, Guderian, as a captain in the Inspectorate of Transport Troops, a logistics organization, conducted experiments with dummy tanks made from automobiles fitted with canvas covers. In combination with secret tests in Russia in the 1920s, these trials led to the concept of the *Panzer* division. In 1931 Guderian's organization was activated as the 3d (Prussian) Motorized Battalion, consisting of armored reconnaissance cars and dummy tanks, that permitted further development of combined arms doctrine. The reliance on dummy tanks was propitious. Germany did not produce its first tank until 1930, thus procurement decisions were deferred until they could be matched against doctrinal concepts. By 1935 the first improvised *Panzer* division was established for exercise purposes and the first corps was finally established with three divisions later that year. When war broke out, the Germans, supported by advanced combined arms doctrine and infiltration tactics, overran the French and forced the British into the sea at Dunkirk.

The German experience exploited several advantages. The pain of defeat in World War I and the forced reduction of their army placed a premium on innovation. Further, they already possessed a nascent combined-arms doctrine that needed only an armored force to reach fruition. Lastly, the *Panzer* force enjoyed political sympathy both in the operational concept and in support for mavericks like Guderian, who had a propensity to offend the established order.[3]

The U.S. Army enjoyed a similar period of innovation in the 1960s. In a stunning example of the rise of an operational concept perfect for its time, the Army established the 11th Air Assault Division to test helicopter mobility. That unit led to the 1st Cavalry Division (Airmobile), which played a critical role in the early years of American intervention in Vietnam. It also participated in wargames and field exercises to advance doctrine and organizational development. Further, it sent companies to Vietnam in 1964 and learned valuable combat lessons. Lastly, it created a base of officers experienced in integrating aviation into Army combat operations.[4]

As with the *Panzer* division, political support was key. Secretary of Defense Robert McNamara specifically directed the Army to explore helicopter mobility. His political support in turn sheltered airmobility advocates. Before that time aviation was a fringe community the Army saw as a support rather than combat arms element. By the end of the 1960s airmobility emerged as an indispensable combat concept.



U.S. Air Force (Delilah A. Castillo)

Monitoring laser calibration test.

The Army experiments with AirLand battle doctrine in the early 1980s found a home in the 9th Infantry Division High Technology Test-Bed. Established at Fort Lewis, this division tested technologies such as light armored vehicles, machine guns, lightweight antitank and antiaircraft weapons, and advanced command and control systems. The goal was to produce both doctrine and organizations to enable rapid worldwide crisis response via air transport.[5] The Army has since made rapid response a hallmark, as seen in Operations Just Cause and Desert Shield.

the space battlelab initiatives are likely to remain small scale and peripheral

Generally, test-beds enabled the examination and synthesis of doctrinal, organizational, and technological concepts. They also allowed experimentation without locking in specific systems for procurement and experimentation based on preexisting systems. They permitted development of officer expertise that later proved valuable throughout the force. And they often served as the basis for new combat-ready units that exploited new capabilities. But the test-beds often needed outside political support to survive and overcome bureaucratic service inertia. Nevertheless, they emerged as a critical method for promoting military innovation that might prove valuable today.

Competing Approaches

Different approaches have been proffered for dealing with innovation. At issue is the Nation's ability to meet threats during this era of technological revolution. At the far right on the spectrum is the status quo. Here four distinct services determine their future needs and take it upon themselves to ensure a modicum of interoperability, requiring only minor bureaucratic change. At the far left is a call for radical organizational change that might envision an eventual merging of the four services into one. These extremes have competing ideals, and pursuit of one can only take place at the expense of the other.

Both models for change have positive aspects. On the right, multiple services engage in service-specific roles and missions because no one service can conduct the complete spectrum of operations in every medium.[6] On the left, a single service efficiently manages a shrinking defense budget. On the far right, the current paradigm continues in hope that the acquisition system will support the pursuit of technology and experimentation to cover all aspects of warfare and achieve interoperability with other services. On the far left, radical change creates a joint forces command with the authority, forces, and resources to transform the military through joint experimentation.[7]

The Conservative Solution

Service-specific battlelabs represent the most conservative option. A typical service-specific program for promoting innovation is the Air Force Space Battlelab at Schriever Air Force Base. Established in 1997, it is chartered to "focus on innovative space operations and logistics concepts, quantify their potential for helping the Air Force fulfill its 'core competencies,' then test the concept in operational situations." Most of its attention goes to field level. A review of ongoing projects reveals that all are *Kenney*-level initiatives, named for General George Kenney of World War II fame and focusing on small tactical initiatives of moderate cost. Their charter enables the lab to address *Mitchell*-level initiatives, named for General Billy Mitchell, and dealing with large, costly, revolutionary concepts; but the space battlelab is not conducting any far-reaching experiments at present. The programs under study apply more to service-specific techniques and procedures such as color space-object identification and use of commercial telescopes to augment space surveillance .[8]

Limited Objective Experiment.

U.S. Marine Corps (David J. Ferrier)

The space battlelab initiatives are likely to remain small scale and peripheral. They have limited funding and manpower. Projects must be completed within 18 months. Further, ideas for battlelab testing are subjected to sanity checks by at a minimum of four review teams prior to approval. Such a process seems unlikely to impart a revolution to the joint force.

Service battlelabs do present advantages for near-term innovation. Given their service-specific orientation and manning, they are highly capable of exploiting service expertise in core competencies. Further, they dovetail with the legislated service missions to organize, train, and equip combat forces for the unified commanders. Thus they are an efficient means of promoting the evolutionary era A change described in the RAND Corporation report.

However, because of a limited focus, battlelabs advocate only service-specific innovation and may fall short on advancing ideas that cross service boundaries and enhance jointness. Further, because of limited resources and mandates, they are constrained to effecting change at the margins but not the revolutionary or era B innovations.

A variant on the concept that illustrates possible modifications for enhanced jointness is the Joint C^{4}ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) Battlelab or JCB, an example of the advantage gained by joint capabilities integration. JCB provides combatant commands on the JTF level with assessment and application integration and fosters rapid insertion of proven C^{4}ISR technologies on the combatant command level. Its relationship with the Joint Requirements Oversight Council (JROC) has given it exceptional leverage to institute changes across service boundaries.

Since its inception in 1996 JCB has made huge gains in ensuring that C^{4}ISR acquisitions are interoperable and has saved scarce procurement dollars. For example, it developed a process that allowed Navy and Air Force Link–16 messages and Army Link–17 messages to exchange data in real time. In addition, it has furthered interoperability across service solutions for asynchronous transmission mode communications, leading to a standardized system across the service lines and a cost savings. These successes illustrate how a joint battlelab is an important evolution and more versatile option than the purely service-owned battlelab. However, like the service battlelabs, JCB targets the 18–36 month timeframe for implementing solutions based on off-the-shelf capabilities rather than new technologies requiring a long-term perspective.

A Balancing Act

The middle ground solution is to appoint U.S. Atlantic Command as the executive agent for joint warfighting experimentation. The National Defense Panel identified the need for such an initiative to bring *JV 2010* to fruition. On May 15, 1998, the Secretary of Defense designated CINCLANT as the executive agent to "aggressively foster innovation and rapid fielding of new joint concepts and capabilities." Under the Secretary's charter, ACOM is responsible to CJCS "to explore new joint warfighting concepts and capabilities and determine doctrine, organization, training and education, material, leadership, and personnel (DOTMLP) implications for change. These experiments will support *JV 2010* and future joint warfighting visions." The validating authorities for DOTMLP changes were CJCS and/or JROC as appropriate until CINCLANT assumed the function.

The ACOM implementation plan (IPLAN) includes a process for taking a concept from an idea to DOTMLP. Concepts are received from multiple sources, translated into future operational capabilities, and prioritized. The joint experimentation campaign plan is published annually and translates concepts into objectives, including resourcing and scheduling. The plan is staffed with all key participants, validated by a board of directors, and approved by CINCLANT.

The primary source for experimentation will be forces over which ACOM has combatant command authority. The command can form JTFs to conduct joint experimentation as directed in the joint experimentation campaign plan. By forming mission specific JTFs, this plan will provide flexibility to the services and allows forces to focus on core competencies when not involved with joint experimentation. It also precludes permanently taking away forces to establish a standing JTF or assigning them directly to ACOM.

The ACOM implementation plan presents a balanced approach towards achieving *JV 2010* and future visions. It maintains the initiative and innovation of the service battlelabs that attack era A-type changes. It also allows for RMAs that may completely change the composition and viability of the military for era B changes. The intent is to use joint experimentation to identify the high-payoff areas for systems development to address current deficiencies, near-term capabilities, and future concepts alike.

Several compelling factors make ACOM an excellent choice for joint forces experimenter. First, it is the current joint forces integrator, trainer, and provider for 80 percent of DOD forces, active and Reserve. With these roles already in hand, the command will soon gain additional expertise by assuming command of the Joint Warfighting Center, Joint Warfare Analysis Center, Joint Command and Control Warfare Center, and Joint Battle Center.

Second, command service components are responsible for conducting service experiments. Including service expertise in the joint experimentation effort will synthesize diverse perspectives on experiments, assess concepts for service-unique capabilities, and enable effective coordination and control to ensure seamless coverage of the spectrum of military operations. Moreover, linking service and joint experimentation facilities and capabilities to create a "federation of battlelabs" will network service battlelabs and the Joint Battle Center into a virtual distributed network.

ACOM will coordinate the efforts of these service experimental organizations and provide a joint context. It will improve standardization in event design, execution, analysis, and reporting on experimentation. ACOM itself will only conduct 10 percent of joint experiments, relying on the services for the "heavy lifting." As the executive agent, it can take advantage of its resident expertise and complementary tasks and use its service components' expertise to ensure that the transformation is built upon diverse, quality, and safe experimentation.

Third, CINCLANT is a unified combatant commander. His area of responsibility has recently shrunk and become more benign. This change will permit proper focus on the newly acquired task of experimentation. As the joint forces provider, trainer, and integrator, CINCLANT will maintain an operational perspective when recommending the direction transformation should take. His warfighting orientation as a geographic CINC will ensure that the needs of the other combatant commanders receive due regard.

The middle-ground virtues of making ACOM responsible for joint experimentation could also endanger its success. Managing joint experimentation could imperil the warfighting focus of the CINC or become a neglected additional duty in a command swamped with crisis management.

The intent of the ACOM plan is to exploit existing exercises as opportunities for joint experimentation. This idea suffers from dangers of distraction. A JTF exercise built around joint experimentation risks reducing the instructional value of the event for troops whose training time is already constrained by operational deployment

55th Signal Company (Russell J. Good)

Remote sentry unit used to track multiple targets.

schedules. Alternatively, the exercise team may well treat the experimental events as distractions that are at best half-heartedly integrated and played in the scenario.

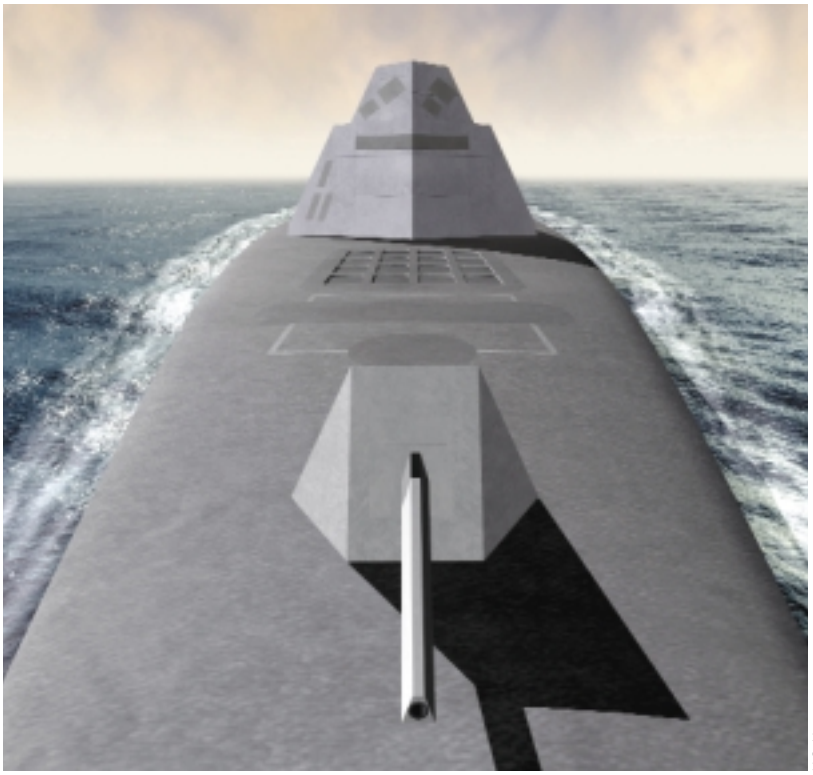
The key to ACOM success as the joint experimentation advocate will be cooperation from the services. This could prove to be the weakest link. The command can make recommendations to the services but will not have directive authority over DOTMLP. The services will need to support joint experimentation with funding and manpower from their battlelabs. They must also be willing to adopt the resulting innovations, which could include doctrinal or organizational changes that counter service traditions. Lack of such cooperation in previous efforts led to the ACOM initiative and could also be the command's downfall.

the key to ACOM success as the joint experimentation advocate will be cooperation from the services

JFC: Cleaning House

A JFC is the most radical option. It would take over service responsibilities for DOTMLP. The National Defense Panel recommended creating a JFC under a functional unified commander. It would be manned with forces detailed from the services, establish joint national training centers, and create a joint battlelab that reports directly to a CINC. According to the proposal, the panel did "not seek to limit individual service innovation in any way. . . . For example, the services would experiment with weapons systems . . . which once certified would be tested in the much broader joint arena."

The JFC option was outlined in legislation proposed by Senators Coats and Lieberman. A Title XXX would amend Title 10 to give sweeping authority to the joint force commander and his joint experimentation efforts. Title XXX would propose establishing a JFC as a unified combatant commander with two principal functions: to integrate



U.S. Navy

DD21 "Land Attack Destroyer" concept.

and provide ready joint forces based in the continental United States to other combatant commanders to carry out assigned missions; and to design, develop, and execute joint experimentation to determine the future capabilities, organization, and operational concepts of the joint force.

However, ACOM is already executing the first function for most CONUS-based forces. Therefore it is not revolutionary. The need for joint integration, training, and providing forces to other CINCs helped drive the unified command plan change that transferred the ACOM portion of the Caribbean to U.S. Southern Command. That permitted ACOM to focus on joint integration and training to ensure that other CINCs received ready and capable forces. It can easily perform the second function as well.

Title XXX would also propose consolidating all CONUS-based forces under a single command. The commander would hold four star rank and have authority to plan, conduct, and assess joint training. He would also advise CJCS and the Secretary on prioritization of requirements and acquisition programs. His command would develop joint doctrine, concepts and tactics, techniques, and procedures along with an overarching process of joint experimentation. The command would also receive forces from all services for designation as a joint experimentation force. It would develop mission need statements and operational requirements documents for major warfighting platforms. It would also evaluate and integrate products emerging from service experimentation. Such broad authority would allow the commander to view all programs being developed, assess potential successes and failures, prioritize programs based on need, and recommend shifting budgets to accelerate some programs and terminate others.

Senator Coats implies that without such *jointness* DOD will wind up with several partially implemented service approaches and no coherent operational concept. However, he also admitted in a speech in October 1997 that services losing discretion over major investment decisions may be the "ultimate threat of jointness." In an extreme view, the gradual weakening of service authority in the quest for jointness might cause the merging of all services into one. The more the services evolve in that direction, the less diverse they become. Thus the military could lose the strength that is based on the complementary effects of separate service core competencies.

It seems unreasonable to expect to represent every type of force of each service in the new command. With a four star CINC at the helm, substantial forces must be envisioned, a drawback in this resource-constrained era. Assigning forces solely for joint experimentation would enable comprehensive testing and evaluation of joint concepts and future technology but at a price. Currently, all CONUS-based forces can be dual-tasked via the multiple joint strategic capabilities plan apportionment for planning. This implies that they can be used in a variety of scenarios in multiple areas of responsibility. These multiple taskings place a heavy training burden on the forces, necessary because of reduced strength coupled with growing operational requirements.

With operational tempo increasing, assigning forces exclusively for experimentation poses competing demands. The services would have to provide them to JFC while fulfilling operational warfighting requirements. The increased deployment of operational forces will have two impacts. First, those provided to other CINCs will suffer in training and equipment readiness. Both quick turnaround and reduced maintenance cycles mean equipment will wear out faster than it can be replaced. Second, servicemembers will opt for other employment. Fewer units stretched over more and varied missions will result in tired personnel who perform missions to a lower standard. This could mean preventable casualties,

which would draw outside criticism. Disenchantment is already appearing, with low first-term retention across service lines and increased resignation of junior officers who are highly qualified for civilian employment.

Senator Coats addressed three factors driving development when he argued for establishing a JFC: assessment of likely threats/adversaries, technology, and fiscal resources. With these tools he pointed to historical innovations that combined technological advancements with new doctrine and organizations to create more effective capabilities. One example is the evolution of carrier aviation. Although Coats rightly identified the factors that drive development, his historical examples bear little resemblance to current reality.

American development of carrier aviation occurred in an environment in which three factors outlined by Senator Coats that drove development were quantified. Military planners recognized in War Plan Orange that the main adversary would be Japan, so the ability to project power across the Pacific was critical. Also, aircraft and carrier technology had been tested as early as World War I. Our small, isolationist military of the interwar era had a low operational tempo and few immediate requirements, enabling it to look ahead. After Navy planners ran focused experiments in the 1920s and 1930s, they determined on how much support to dedicate to new organizations and matériel.

early adoption of immature technologies could leave the services at a disadvantage as other powers leapfrog ahead

Development strategy today rests on the same factors of threat/adversary, technology, and resources. Potential enemy operational methods are a blank slate. Best guesses pit an advanced force against an asymmetrical, unsophisticated enemy who may reduce technological advantages of U.S. forces. This asymmetry may place the Nation at a handicap. Therefore, the technology to be pursued as a basis for change is unknown. Finally, the realities of today require focusing fiscal resources on operational requirements in a demanding, high operational tempo environment. With so many unknowns, a broad perspective for experimentation is essential.

Evaluating options for joint experimentation means considering myriad factors. Planners should favor the proposal that builds on lessons of past innovation, is best suited to produce joint and synergistic change, and both promotes era A evolution and allows the Armed Forces to exploit era B revolution. They should choose the option that is realistic given current resource constraints. To take the best of both ideals, the preferred direction should approximate the middle of the spectrum. This middle ground solution, according to the ACOM implementation plan, should combine the strengths of both extremes and "implement an aggressive program of experimentation to foster innovation and rapid fielding of new concepts and capabilities for joint operations, and furthermore to evolve our military force through the 'prepare now' strategy for the future." Given these parameters, ACOM is the logical choice as the executive agent for joint experimentation.

The above approach has a number of advantages. Because it is the military's proposal, existing bureaucracies may be more amenable. By channeling the efforts of present organizations, it drains minimum resources from readiness, thus maintaining the U.S. lead during the transformation. By tying into service experimentation organizations, it exploits their existing pool of expertise. By working for a combatant commander, it maintains an operational focus and integrates innovations quickly.

However this approach can fail. It will require commitment from other unified commands. The services must cooperate both with each other and with ACOM to exploit joint experimentation recommendations and create synergy. They must fund and fully support command efforts. It will be easy to treat these initiatives as distractions and marginalize them. The services and unified commands must remember the political pressure for change and recognize that Congress will force a solution on them if this effort fails. Attention to bureaucratic loose ends will be needed. Redundant programs such as the Joint Interoperability Test Center and initiatives such as the commander's interoperability initiative fund need to be eliminated or folded into the ACOM purview.

Some philosophical warnings are also in order. The experimentation must be objective. The answer must not be predetermined. Early adoption of immature technologies could leave the services at a disadvantage as other powers watch the United States and then leapfrog ahead. The year 2010 should not be treated as a hard deadline.

In this era of RMA, it is tempting to join the transformation by jumping in with both feet. Reports from the National Defense Panel indicate that the need to create a transformation process is urgent. Further, the *Quadrennial Defense Review* reported a world of evolving threats including "WMD, information operations, and an array of asymmetric means to exploit our operational vulnerabilities." This bleak future combined with constant pressure to reduce defense spending is

the impetus for demanding drastic change in the way the Armed Forces organize, train, and fight. During an age of technological advances, the desire to embrace the revolution with both hands and accept total change unconditionally is almost overwhelming, as if the military were racing an invisible clock and falling behind. However, a conservative attitude in the midst of a storm could provide the safety mechanism to ensure prudent change rather than reckless pursuit of a concept that may or may not fit national needs.

All the developmental eggs should not be placed in one basket, such as information warfare or directed energy weapons. The Armed Forces must preserve the ability to confront industrial and pre-industrial era threats. It embarked on a search for a silver bullet in the 1950s. The result was the pentomic Army, the all-nuclear Air Force, and a dearth of basic skills to fight technologically inferior opponents on the Korean peninsula and in Southeast Asia.

Finally, technology is not the complete answer. The human dimension is critical in war. Technology must be married to an uncompromising level of intellectual and procedural skill among those who wield it. Military technological innovation must enhance the effectiveness of the joint warrior instead of becoming an end in itself. Appointing ACOM the executive agent for joint experimentation balances insurance against an uncertain future with the requirements of present readiness, thus maximizing the efficiency of the military's most precious resource, its people. **JFQ**

NOTES

[1] Arthur K. Cebrowski and John J. Garstka, "Network-Centric Warfare: Its Origin and Future," *U.S. Naval Institute Proceedings,* vol. 124, no. 1 (January 1998), pp. 28–35.

[2] Paul K. Davis et al., "Transforming the Force: Suggestions for DOD Strategy," unpublished draft (Santa Monica: The RAND Corporation, June 23, 1998), pp. 2–4.

[3] Charles Messenger, *The Blitzkrieg Story* (New York: Charles Schribner's Sons, 1976), pp. 56–59, 76–83; Williamson Murray, "Armored Warfare: The British, French, and German Experiences," in *Military Innovation in the Interwar Period*, edited by Williamson Murray and Allan R. Millett (Cambridge: Cambridge University Press, 1996), pp. 6–49.

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USS Coronado leaving Pearl Harbor for RIMPAC '98.

Fleet Imaging Command Group, Pacific (August Sigur)

Command and Control for Joint Strategic Actions

By DOUGLAS A. MACGREGOR

A decade after the dissolution of the Warsaw Pact, and following a series of defense policy reviews, the most critical security question remains unanswered: What kinds of forces, strategies, and resource commitments are needed for the future? This is no accident. A 30 percent reduction in the defense budget since 1989 and a reluctance on the part of the services to adopt any plan that fails to reaffirm their traditional roles and force structures combine to obstruct meaningful change. In fact, the budget topline imposed by defense reviews and legislation has intensified interservice rivalry and prompted the senior military leadership to stress the validity of existing single-service doctrine, organization, and tactics. Thus the United States risks wasting the opportunity to make significant gains on rival militaries. A revolution in military affairs (RMA) will occur whether defense leaders encourage it or not. The choice is whether to be the beneficiary or victim.

Such a revolution is evidenced in potential enemies—nations, failed states, and subnational groups—dispossessed by modernization and each trying to acquire capabilities to strike decisively with weapons of mass destruction (WMD). Strategists must assume that future adversaries will possess not only some form of WMD but precision-guided munitions along with electronic intelligence and satellite imagery provided by third powers.

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Marines during LOE3, Urban Warrior.

2d Marine Division (Craig J. Shell)

Opponents will attempt to outpace the American response to their capabilities and present the United States with a strategic *fait accompli*. Moreover, by threatening a war of attrition or the use of WMD to avenge battlefield successes by the Armed Forces, enemies will seek to eliminate political resolve. This strategy deserves our attention.

Part of the solution involves projecting ground forces into the unified commands much more rapidly and with greater mobility, firepower, and force protection. Fundamental change in the way ground forces organize to deploy and fight is essential to cope with these new dynamics. Army ground forces must become more expeditionary. Marine ground forces must accept that an island hopping campaign is now no more probable than a defense of the Fulda Gap. Both forces will have to cooperate closely with each other and with airpower to exploit America's growing air and space capabilities. Landpower must become an amalgamation of Army and Marine capabilities within a more agile, operational joint framework.[1]

Changes in strategy have always derived from the ability to fight new kinds of war. With that in mind, this piece builds on concepts introduced in the author's *Breaking the Phalanx: A New Design for Landpower in the 21st Century* and argues for a top-down transformation of the joint force land component command (JFLCC) concept.[2] The idea is to take advantage of new technology, operational concepts, and warfighting organizations to more rapidly project and jointly employ ground forces. By building on experience with Army and Marine Corps structures, the changes outlined here are designed to achieve a flatter, less hierarchical command structure that can reduce the time for ground elements to begin combat operations. This transformation involves establishing joint operational command and control (C^2) structures for deploying tactical ground forces that are subordinate to the regional unified commands.[3]

Adjusting to New Dynamics

At the height of their military glory, the Spartans sent a deputation to the oracle at Delphi and demanded arrogantly: "Can anything harm Sparta?" The oracle answered, "Yes, luxury."[4] To the same question about the Armed Forces, the oracle might answer, "Yes, bureaucracy." Ever since the Soviet collapse gave the United States unprecedented military dominance, the ratio of command, control, and support to fighting forces has actually grown without any increase in

combat power or flexibility where it is most needed—on the battlefield. This is interesting because the opposite is true for American business. Corporate headquarters continue to shrink. This paring of top-heavy management has helped productivity climb to record highs while exhibiting historically unique flexibility. Downsizing, reengineering, outsourcing, and decentralization have cut corporate staffs and the functions concentrated at headquarters. Information technology has reduced meetings and created function-based organizations that share critical data.

Rosabeth Moss Kanter of the Harvard Business School characterizes the private sector's response to change in the strategic environment of business in *World Class*. Her words suggest new directions for the way ground forces can be commanded and controlled.

Across industries, forces for change are similar: industry consolidation, changing regulation, new technology, more demanding customers, and pressures for lower cost, higher quality, greater speed. The responses are also similar: a search for new markets (often internationally), acceleration of new product development, and implementation of a new organizational model, one that comprises fewer layers, faster processes, greater use of teams, employees educated to solve problems autonomously, deeper relationships. . . . Change is a matter not of failure but of success. The most change is occurring in the most successful companies.

in *Force XXI* the Army is concentrating on developing a tactical C² structure from the ground up

Military progress tends to follow civilian progress, though at a considerable distance. One reason for the lag is that in military culture the burden of proof falls on the advocate. Thus changes in the nature of warfare must be widely recognized within the military in order for innovation to occur. In 1929, for example, there was still no sense in America's professional military that World War I had really changed anything. Opponents of mechanization and defenders of the horse cavalry even suggested that "An unfed motor stops; a starved horse takes days to die."[5]

While there is not space here to debate how much has changed, it is possible against the backdrop of Panama, southwest Asia, Somalia, Haiti, and Bosnia to offer some observations about the direction of change as it pertains to American ground forces.

- For the foreseeable future, rapid response to crises around the world will be in much greater demand than a static territorial defense of central Europe or northeast Asia.
- How quickly a force can deploy is as important as how much force to assemble. To obtain a real advantage from rapid deployment, ground forces must be able to conduct offensive, defensive, or peace enforcement operations almost on arrival in regional unified commands.
- Permitting conflicts to drag on rather than rapidly crushing an opponent risks failure. The proliferation of WMD and the RMA technology to employ them suggest the danger of delay.[6]
- The newer the technology or its application, the more important it becomes to design its use with the world in mind. Single service, theater-specific remedies are features of the past.
- The direction of the current RMA points to a system of systems that encircles the earth. It will be critical for ground forces to integrate seamlessly into the global strike capabilities this system will make possible both to exploit its potential and to guarantee the safety of those forces.

The ability of CINCs to gain quick access to ready ground forces and to their command and control operationally and tactically will thus be decisive. In practice this means that Army and Marine ground forces must be prepared to deploy on a telephone call. Given the reduced size of the active Army component since 1991 and the requirement for rapid force projection, these points underline the need for a C² unanimity which transcends service lines. Thus the Army and Marine Corps should look hard at streamlining their operational level C² within a joint framework.

In *Force XXI* the Army is concentrating on developing a tactical C² structure from the ground up, taking for granted all existing nodes and echelons.[7] Experience in Germany and Korea reinforces a preference for theater-specific Army command and control structures. However, it is no longer possible to limit the scope of Army C² to predetermined locations and narrow tactical missions. Deployments since the mid-1980s show the need for a more global approach.

Top-Down versus Bottom-Up

Jointness exists when services develop mechanisms—operational and tactical structures, processes, and expertise—for bridging service differences and extracting strategic value from interservice cooperation. In this sense, joint C² is defined as a joint system of command links/nodes integrating maneuver forces and strike assets, informed by a variety of sensors such as digital and other communication and data links. Viewed as a unified system, this conceptual structure provides information for planning and executing coordinated "all arms" operations.[8] The critical step, however, is to create joint C² structures on the operational level that help warfighting CINCs respond quickly to events within their regions. The question is how.

One approach to joint C² architecture for ground forces is to borrow from the experience of naval forces, whose global focus led to a different C² evolution. They have tended toward a top-down rather than bottom-up approach on the strategic and operational levels. This has bridged the gap between an efficient global command and control structure and tactical autonomy by stressing functionally-based organizations and modularity. This is the approach of the Marine expeditionary force (MEF), the service's principal warfighting organization for large contingencies.

Unlike the Army Corps structure so essential to division warfighting, an MEF can vary in size and composition from 5,000 to 50,000. At the heart of this expeditionary structure is the Marine air-ground task force (MAGTF), which provides a microcosmic model for joint C² on the operational level for both Army and Marine forces.

The building-block approach to MAGTF organization is based on a simple formula that organizes task forces into discrete command and control elements. At the top is the command element for planning and execution. The three subordinate C² elements are one to direct ground combat operations, one for air-to-air combat, close air support, air reconnaissance, electronic warfare, and control of aircraft and missile systems, and one providing the full range of support functions from sea bases aboard naval shipping or from temporary bases ashore. In addition, the modular structure lends itself to rapid expansion by adding forces to the core units of each element.[9] A joint C² system on the operational level could mirror this simple, discrete, and modular approach. However, it would have to consistently provide useful real-time information in a form that helps the commander recognize key events, formulate responses, and transmit them to subordinates in time for implementation. This is because in addition to moving thousands of subordinate entities and striking targets, land force commanders must deal with a thinking enemy who is reacting to their every move.

In this setting the opportunity for information overload cannot be overstated. Consequently, the need for functional simplicity as seen in MAGTF is enormous. Masses of information flowing through sensors and aggregated by computer power into pre-formatted messages will not reach the critical points of authority in time if the complexity of the command and control structure impedes its flow. None of this is to suggest that new information technology will provide answers that have eluded commanders in the past. If the commander does not already know what is important, more information will not help. Still, provided the C² structure is simple in organization, today's technology will deliver the information. This is a critical reason why using the close/deep/rear framework as the conceptual basis for C² organization on the operational level offers significant advantages. Each military decisionmaker (close/deep/rear) has an area of authority distinct from the others (modularity), commands pass in only one direction (hierarchy), and each decisionmaker determines within the higher commander's intent how to execute commands (operational autonomy).[10]

Extrapolating from the MAGTF structure to the operational level suggests a JFLCC model with close/deep/rear functionality. The three-star commanding a structure based on either the Army Corps or Marine MEF has an independent mobile headquarters element and three autonomous, mobile headquarters under general officers. For reasons that will become clear, in the notional JFLCC structure outlined here major generals were selected to command the close/deep/rear headquarters. Depending on the crisis, conflict, or peacetime mission, one or all of these headquarters could be deployed. The number of officers and other ranks assigned to all three elements could total as few as 500. Ideally, these headquarters are configured for rapid deployability with strategic airlift that includes wheeled armor, helicopters, and satellite communications.

Within this framework one major general within JFLCC commands the close combat forces deployed to it. Such formations could consist of Army or Marine Corps armor, airmobile infantry, or attack helicopters in support of the close fight. In some actions, for instance, Marine infantry might cooperate closely with Army armored and helicopter reconnaissance. In practice, this joint commander supplants the Army or Marine division commander and headquarters who otherwise would have to deploy from the continental United States (CONUS). It should be transparent from the strategic and operational levels whether the tactical maneuver formation is Army or Marine.

A second major general commands deep combat operations. The term *deep* in this context can be misleading. Time, target, and effect rather than merely space actually separate the deep and close fights. Further, deep in land warfare is operational, not strategic in the sense of strategic air operations. This is not to suggest that precision weapons and dramatically increased firepower from rocket artillery and airpower do not create the need for a joint C² structure on the ground that can exploit these capabilities. On the contrary, for ground force maneuver to succeed, the means to employ strike assets are critical. Sophisticated intelligence collection and targeting

31st Marine Expeditionary Unit (Chris Tourge)

Maritime special purposes force aboard *USS Belleau Wood.*

analysis are of limited value without the C² structure to quickly exploit both information and strike capabilities.

With the emergence of a system of systems global strike complex, the deep fight commander's links to the complex and the Army and Marine tactical formations become pivotal. This structure emerges as the critical bond to the joint force air component commander (JFACC), who will want to exploit the capabilities residing in ground strike and maneuver forces to suppress or defeat enemy air defenses and missile attacks. For that matter, theater antiballistic and cruise missile defense missions will also become integral to the deep structure.

theater antiballistic and cruise missile defense missions will also become integral to the deep structure

In the event that combat maneuver forces are tasked to strike deep into enemy territory, this headquarters would also command those elements. This suggests that the deep headquarters and not the close combat headquarters would control airmobile formations operating in conjunction with attack helicopters in front of advancing friendly ground forces. This deep C² structure would be postured to deconflict and harmonize Air Force air and Army and Marine operations in the deep fight, ensuring mutual support and fratricide prevention. When force movement changes the spatial disposition of ground forces, the close combat commander or even the rear sustainment commander could assume control of these elements.

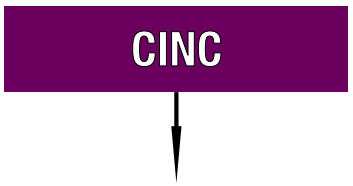
Sustainment operations offer rich opportunity for joint C² under the third major general in the structure. Some weaponry and technology will remain service-specific in the near term, but the Army and the Marines can share logistics support in such areas as cross-service equipment, supply transportation, storage, transfer, port opening services, prepositioning afloat, and over-the-shore logistics. As seen during Desert Storm, rationalizing sustainment operations for ground forces within a joint C² framework simply institutionalizes practices that emerge under the pressure of war anyway.[11] In the long term such a transition will reinforce the need for greater independence in tactical formations and could eliminate the rear area except as a communications zone.[12]

This JFLCC structure could contribute substantially to the formation of a mission-specific joint task force (JTF) headquarters. Three possibilities come to mind. In the simplest case—a large-scale crisis or theater war—the regional CINC assumes the commander JTF (COMJTF) duties and the Army-Marine JFLCC is involved as a subordinate. One JFLCC could control up to 50,000 troops. If the ground force were larger, a second from U.S. Atlantic Command or part of a CONUS-based JFLCC could be deployed. For instance, a second close combat headquarters could be added if JFLCC determined that the accession of more close combat formations made the span of control too great for one.

In the case of a three-star COMJTF, the regional commander could designate the appropriate component commander, whose component command staff would form the bulk of the JTF staff, augmented by the other two component commands. A three-star Air Force commander could recruit the deep fight JFLCC commander and his headquarters if ground forces were needed to augment Air Force suppression of enemy air defense elements. For the volatile Balkans a JFLCC in the Mediterranean could command and control 50,000 troops in combat or peace enforcement operations.

In the case of a smaller JTF led by a two-star COMJTF from within the appropriate component element, that command would again contribute the bulk of the staff, augmented by the other component commands. An example could be disaster relief in a place like Papua, New Guinea, when it was struck by a tidal wave. A major general with close, deep, or rear headquarters already assigned to the regional command could provide the core headquarters and assume mission responsibility. This helps solve the problem of establishing JTF headquarters that are both knowledgeable about the region and formed on short notice for an immediate crisis.

Figure 1. Warfighting CINC (Regional Unified Command)

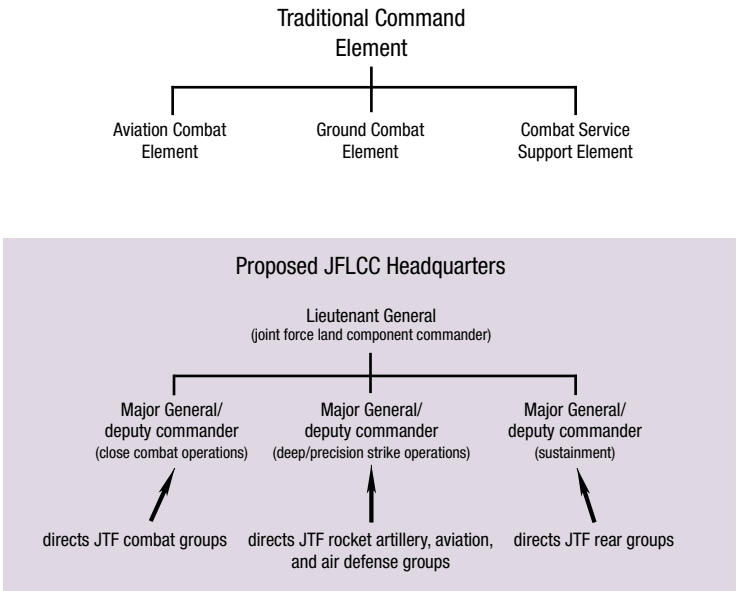


JFLCC

This joint headquarters is structured to control land forces and includes one lieutenant general in command with three major generals oriented on close, deep, and rear functions. These can be Marine or Army-based headquarters with at least one of the major generals from the other service.

There can be two types of JFLCCs: standing (with assigned forces) and contingency (without assigned forces). In the case of embedded operational joint C⁴I, JTFs can be formed as necessary for regional employment.

Figure 2. Traditional and Proposed Command Elements



How many JFLCC headquarters structures should exist and how should they be focused? In the regional commands, the role specialization proposed here could call for JFLCCs comprising designated Army and Marine commanders and joint staffs with responsibility for planning and executing operations within the close/deep/rear framework. Land force commanders must integrate political directives and military power with a thorough knowledge of regional socioeconomic conditions, historical development, and political life. Experience in Vietnam, Southwest Asia, Somalia, and Bosnia indicates that use of military power can go awry without that appreciation. There is an acute need for operational command and control structures, subordinated directly to the regional CINC, to be focused on likely regional contingencies. The world is too complex to suppose that an operational headquarters based in the United States can go anywhere and execute a broad range of complex military tasks on short notice. A possible distribution for JFLCC structures is shown in figure 3 (see page 31).

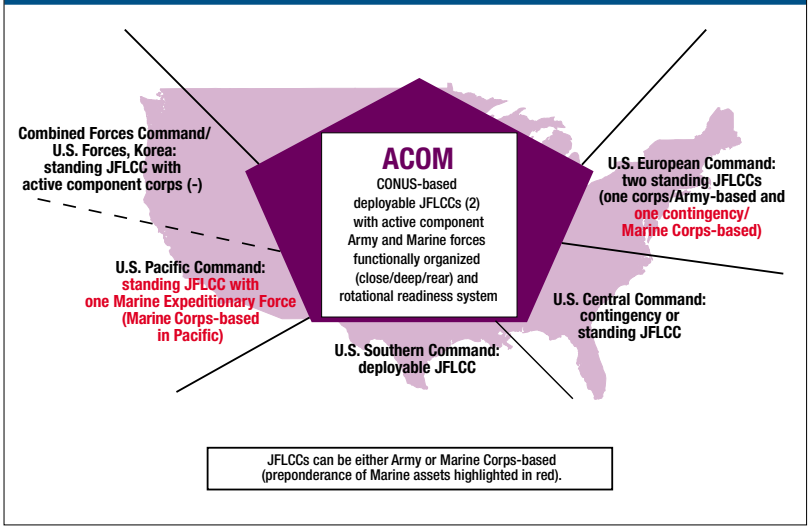
Scrapping many single-service component headquarters in the unified commands and in the United States allows for organizing future joint task forces around functional areas. The resulting joint forward-deployed land force headquarters would then be positioned to replace the CONUS-based Army division and corps headquarters that require months to deploy. Tactical ground maneuver formations could then rotate to regional commands to both exercise and execute forward presence missions much as naval forces rotate in and out of the regional commands. Similar economizing could be applied to CONUS-based Marine headquarters with the object of reallocating general officers and staffs to JFLCCs in the regional commands. These measures would not only reduce deployment times for both the Army and Marine Corps but also save money. It should be remembered that change in force employment has jointness consequences for force development.

C² for Strategic Responsiveness

Weapons of mass destruction and the fragility of alliances under crisis conditions make an extended preparation of ground forces risky for operations close to enemy forces. The enemy will seize all available time to organize or to disrupt the deployment of ground troops. It is therefore dangerous to concentrate combat power too early. Subordinating operational level joint C² to the regional unified commands allows packaging Army and Marine tactical forces for rapid deployment. Without the enormous administrative overhead of Cold War headquarters structures, Army and Marine tactical elements could be configured to move much more rapidly from widely dispersed staging areas overseas and in CONUS.

The theater, army, corps, and division structures were designed for the mass mobilization of industrial age war. Laminating them with tons of electronic hardware and computer software is unlikely to simplify command arrangements, improve readiness, or reduce response time for

Figure 3. Proposed JFLCC Organization and Distribution



deploying ground forces. For example, brigades are still structured to deploy as part of larger divisions. Divisions are structured to deploy as part of larger corps. Deploying one without the other means selectively moving mission-critical elements from one to another. The readiness of one or more of these formations to deploy and fight is thus inevitably degraded.

Strategic responsiveness means organizing ground forces that can be activated before the peace is lost. Grouping ground tactical forces based on functions—close/deep/rear—confers greater independence on tactical formations smaller than divisions that can deploy rapidly and operate across the conflict spectrum. When structured for joint C², these forces provide an agile mix that can dominate maneuver and precision strike within the JTF framework. Packaging tactical forces on a close/deep/rear basis also creates visibility for critical Army assets such as rocket artillery and attack and transport helicopters, currently submerged in the amorphous Cold War structure.

Army and Marine forces are likely to be combined into the core elements of most future joint task forces

The JFLCC structure presented here addresses the urgent need for rapid deployment and operational readiness of ground forces within a joint framework. As mentioned earlier, designating major generals as close/deep/rear commanders eliminates the need for sending division and corps headquarters from the United States. At the same time, post commanders at home would provide a training environment conducive to rapid deployment of tactical formations to the regional unified commands. These commanders would manage core competency training up through and including training center rotations. This suggests a two-dimensional system containing an administrative logistical command structure that supervises and supports training and an operational command structure subordinate to the regional unified commands for deploying ground forces in joint training or conflict within a particular unified command. The Navy currently employs a similar approach.

Such a top-down method of organizing C² and ground forces promises a flatter command structure with more rapid decisionmaking and strategic responsiveness. More important, it recognizes that Army and Marine forces are likely to be combined into the core elements of most future joint task forces. Of course these changes will also necessitate modifications to Army National Guard and Reserve structures for command and control. The impact of disestablishing unneeded Reserve headquarters is no less important than in the active component.

The potential for integrating information systems with the C² process in support of the arrangements outlined here is limitless. Given the need for simplicity in C² structures and for training, leadership, and equipment to achieve greater autonomy and dispersion on the tactical level, airborne and space-based sensors expanding coverage beyond line-of-sight will allow tactical commanders to exploit opportunities much more rapidly. It is no exaggeration to suggest that the old adage "Give them artillery and you've made them independent" will soon be replaced with "Give them unmanned aerial vehicles and joint C⁴ISR and you've made them independent." Robert Killebrew describes the type of communications capability that could support the modular JFLCC envisioned here.

Communications nets of all kinds can be lodged in space, with databases on the ground and data transferred over dense, redundant nets using virtually unlimited bandwidth. These changes can free maneuver units from dependence on bulky terrestrial systems that are easier to intercept and jam than those in space or near-space. The explosion of space-based commercial systems, now on the horizon, suggests that most, if not all, future space-based military communications may be carried by commercial vendors.[13]

Almost imperceptibly, personal computers have gone from unconnected to connected. And networked embedded processors are starting to integrate diverse activities in the private sector for greater adaptability and transparency. This trend

AV–8B landing at Twentynine Palms.

2d Marine Division (E.J. Young)

will inevitably impact on joint command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4ISR) systems. Off-the-shelf commercial technology is far more advanced than that fielded in the Armed Forces. How can the military keep up with the maddening pace of change in communications?

The selection of joint C^2 systems with the desired level of baseline interoperability may require leasing operational and strategic C^4I hardware and software from the private sector. There is not much point to investing scarce defense capital in outright purchase of C^4I equipment in the current environment. Technology is outpacing defense research, development, and procurement. Leasing such systems could provide regular upgrades to guarantee state-of-the-art capability.

Closing Thoughts

Senior officers on the operational level are central to the drama that translates strategic goals into tactical action. They must not only constantly link the strategic and tactical levels but comprehend the actions of their opponents in a similar context. How they interpret missions and employ their forces dominates operations. This is why an integrative structure of multiservice command and control must exist on the operational level that induces military leaders to interpret information and activity in ways that exploit capabilities across service lines. This is the underlying purpose of the JFLCC structure described here. It is, of course, only one of several critical steps. Joint training, doctrine, education, and modernization are also essential. Based on progress in these arenas, the JFLCC concept outlined could be adapted to include senior officers from all services. Integrating Army and Marine leadership on the operational level is, however, a plausible start in this much longer process.

Having said that, American ground forces now need a joint warfighting C^2 structure on the operational level with joint C^4ISR that facilitates the rapid deployment of tactical formations by strategic air and fast sealift to the scene of action in the unified command. The concept presented here is designed to meet the need for speed and agility while offering an alternative to debilitating force structure cuts. The JFLCC approach promises long-term economy by reallocating human and matériel resources from the World War II mobilization headquarters structure to the regional unified commands where JFLCCs can be organized and positioned to contribute to JTF headquarters establishment and be ready for immediate joint strategic action.

As mentioned at the outset, the bureaucratic and technological legacies of the Cold War continue to divert attention from the social, political, economic, and technological change in the strategic environment since 1989. Yet the international situation is becoming more dangerous, and nothing is emerging to replace the European world order. This necessitates reshaping the U.S. military system for conflict across the spectrum, across the globe. The concepts here are part of an adaptive

approach at the beginning of a new RMA that will allow Army and Marine landpower to absorb emerging technologies. Ideally, a unified command should be selected to examine these concepts in a joint operational environment.

Adaptation, however, is not just a function of technology. The Russian officer who witnessed Prussia's titanic victory over Austria at Koniggratz in 1866, Major General Dragomirov, dismissed newspaper claims that new breech-loading rifles were responsible for Prussian success. "It wasn't the needle gun by itself . . . but the men who carried it." And the French military attaché was probably more insightful when he noted that regardless of what technological advantage the Austrians possessed, it would not have changed the outcome in 1866: the war was won by the Prussian high command.[14]

To adapt to this new environment, a common view of what can work and what is necessary must shape the design of ground forces. If the Army and the Marines cannot articulate a collective, coherent vision, the defense bureaucracy will more likely supply the force structure it knows than the one the Nation needs. Some of these changes involve the recognition that surface ships have not become significantly faster and that Army and Marine Corps combat forces can thus reach the scene much faster by air.

Making judicious choices today about modernization and configuring tactical ground forces for rapid deployment in the close/deep/rear joint framework will equip forces with the operational reach, force protection, and mobility that both Army and Marine crisis response forces lack. At the same time, prudent requests for further additions to air and fast sealift transport and prepositioning capabilities can augment the JFLCC role in boosting tactical responsiveness of landpower. The alternative—keeping headquarters that are no longer strategically relevant and relying on new information technology to enable Cold War organizations to fight the last war better—will not transform the force. Moreover, it risks wasting the opportunity to steal a dramatic march on potential enemies. Paraphrasing the oracle of Delphi, "Missed opportunities to make real changes are luxuries that can harm the U.S. military in the 21st century." JFQ

NOTES

[1] Williamson Murray, "In Search of the Army after Next: Another Perspective," *Marine Corps Gazette*, vol. 82, no. 1 (January 1998), p. 71.

[2] Douglas A. Macgregor, in *Breaking the Phalanx: A New Design for Landpower in the 21st Century* (Westport, Conn.: Praeger, 1997), outlines concepts for reorganizing the Army and the contribution of a joint command and control structure for landpower.

[3] The boundaries of the levels of conflict tend to blur and may not correspond to levels of command. Nevertheless, in the American system the strategic level is usually the concern of the National Command Authorities and the highest military commanders, the operational level that of theater commands, and the tactical level that of sub-theater commands. *Essays on Air and Space Power*, vol. 1 (Maxwell Air Force Base, Ala.: Air University Press, 1997), p. 13.

[4] Earl Wavell, *The Good Soldier* (London: Macmillan, 1948), p. 43.

[5] Charles Messenger, *The Blitzkrieg Story* (New York: Charles Scribner's Sons, 1975), p. 58.

[6] For instance, cruise missiles are attractive strategic weapons. They offer a first strike and retaliatory capability. They are relatively small and can be launched from various platforms, including trucks, submarines, and aircraft. They are easy to hide and disperse. W. Seth Carus, *Cruise Missile Proliferation in the 1990s* (Washington: Center for Strategic and International Studies, 1992), p. 45.

[7] "Force XXI: Division Redesign," *Army Times*, June 22, 1998, p. 5.

[8] F.E. Littlebury and D.K. Praeger, *Invisible Combat: C³CM: A Guide for the Tactical Commander* (Washington: AFCEA International Press, 1986), p. xi.

[9] U.S. Marine Corps, *Expeditionary Organizations* (1998), chapter 3, p. 5.

[10] S.L. Brodsky, "Control Aspects of C²" in *Selected Analytical Concepts in Command and Control*, edited by John Hwang et al. (London: Gordon and Breach Science Publishers, 1982), pp. 56–57.

[11] Terry J. McKearney, "Rethinking the Joint Task Force," *U.S. Naval Institute Proceedings*, vol. 120, no. 11 (November 1994), p. 54.

[12] Alvin H. Bernstein and Martin C. Libicki, "High-Tech: The Future of War? A Debate," *Commentary*, vol. 105, no. 1 (January 1998), pp. 28–34.

[13] Robert B. Killebrew, "Learning from Wargames: A Status Report," *Parameters*, vol. 28, no. 1 (Spring 1998), p. 133.

[14] Gordon Craig, *The Battle of Koniggratz: Prussia's Victory over Austria, 1866* (Westport, Conn.: Greenwood Publishers, 1964), p. 174.

The Area of Operations—
Fighting One Campaign

By DOUGLAS E. UTLEY

Providing command and control, Combined Arms Exercise 4–98.

2d Marine Division, Combat Camera (S.A. Harwood)

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Emerging concepts for command and control increasingly pit air commanders against land commanders for the control of airpower in the deep battle—beyond the range of friendly artillery. Increasingly, both Army and Marine Corps officers insist on controlling operations in their areas of operations (AOs)—which extend ever deeper into the battlespace beyond friendly ground forces. From an Air Force perspective, creating AO commanders partitions the battlespace and fragments airpower planning and employment. Rather, the Air Force argues that airpower can accomplish objectives throughout the battlespace including some the Army and Marine Corps have regarded as their responsibilities.

The land force approach to command and control (C^2) follows a cultural bias on geographic zones or sectors. From an airpower perspective, zones, sectors, or areas are less important than assignment of objectives for establishing supporting/supported relationships among components. The latter concept certainly requires fewer resources and personnel to accomplish all needs throughout the battlespace. Land forces have a critical requirement to influence events beyond the range of friendly field artillery, but air and space forces remain the best source of information and provide the preponderance of capabilities to accomplish those objectives. Thus the joint force air component commander (JFACC), through a jointly manned and expert staff, is best suited to integrate those joint forces capable of fighting the deep battle.

Deep Battle

The term *deep battle* has little relevance for air forces. The air commander wages battle throughout a CINC's area of responsibility (AOR) or a joint operations area (JOA). Whether targets are close or far, shallow or deep, is of less concern than their importance to achieving the objectives of joint force commanders (JFCs). The desired effects on enemy centers of gravity and the actions enabling penetration to them drive where, when, and by what targets are attacked. The speed, range, flexibility, and survivability of airpower allow JFCs to employ asymmetrical force against

strategic, operational, and tactical targets in a parallel, simultaneous manner. Airmen and aviators usually measure depth by the number of threats en route to assigned targets. Generally, the more numerous the threats, the deeper the airman must penetrate. Both high performance and stealthy aircraft increasingly make the issue of depth less meaningful.

In contrast, the land force commander measures depth in terms of geography and time. How long or how far does it take to close with enemy forces? Time and distance equate to ability to shape battlefields. The greater the time and distance, the greater the opportunity to influence relative strengths, terrain advantages, and other factors. For example, the land commander focuses on the distance and strength of second echelon forces from the perspective of the number and relative strength of friendly battalions that remain to meet them. The farther out a land commander can engage enemy ground forces the greater the attrition that can be inflicted before contact is made and the more influence can be exerted on where and when engagement occurs. Thus geography and time are of greatest importance to land force commanders.

land commanders have always wanted greater control over aircraft

DOD (Efrain Gonzalez)

Establishing communications at Combat Support Operations Course, Fort Dix.

Historically, air forces have been the predominant elements operating deep against ground force targets. In World War II before July 1943, aircraft were employed like field artillery. Key ground commanders who dictated priorities were concerned with establishing air umbrellas over friendly troops and attacking targets in visual range. After the disaster at Kasserine Pass, command and control of aircraft was centralized under a single air commander to mass airpower for decisive effects throughout the theater. Since then air targeting and aircraft control have been the purview of air commanders, who command the airmen/aviators occupying the deep battlespace and have the best situation awareness of the area and expertise to employ air assets. Interestingly artillerymen frequently target by using situation awareness provided by air and space reconnaissance, whereas airmen rarely use information provided by artillerymen. Land commanders have always wanted greater control over aircraft because of the information and the destructive capabilities they offered. Just as artillerymen are best suited to conduct artillery operations, airmen are best suited to conduct air targeting and air employment throughout the battlespace, especially beyond the range of massed artillery.

Interpreting Doctrine

Command and control over disparate forces that operate deep must be both integrated and controlled at the appropriate level. This battle is waged by various ground and air capabilities, but primarily the latter. Air assets employed in the deep battle are manned or unmanned aircraft (fixed and rotary wing) and guided surface-to-surface missiles. They include reconnaissance assets such as U–2s, the joint surveillance and target attack radar system (JSTARS), RC–135s, EP–3s, P–3s, and unmanned aerial vehicles. Also critical are electronic assets such as F–16Cs—with the high-speed antiradiation missile (HARM) targeting system—and EA–6Bs, psychological operations assets like the EC–130 Commando Solo, and fighter/bomber/attack aircraft, helicopters, and Tomahawk land attack missiles (TLAMs) with precision munitions to destroy ground targets.

Ground assets are frequently limited to ATACMS and Special Operations Forces (SOF). Because these capabilities are employed in the same area, they must be coordinated to avoid mutual interference, maximize efficiency, and reduce fratricide.

Until recently, command and control of forces in deep areas was clear-cut since only the air commander had situation awareness and owned forces that could strike deep targets. Increasingly, as the Army acquired a few longer-range weapons and its aviation force has substantially been severed from ground maneuver units, friction has developed over targeting and airspace allocation. Army and Marine arguments are rooted in command and control through geographically assigning areas of operations (zones or sectors). Air Force arguments are based on the inherent speed, range, mobility, and flexibility of aircraft that must be centrally controlled for decisive employment anywhere in the battlespace.

E–4B leaving Offutt Air Force Base.

1st Combat Camera Squadron (Ken Bergmann)

1st Combat Camera Squadron (Cary M. Humphries)

On board National Airborne Operations Center E–4B.

Current C² doctrine can be interpreted in different ways. Joint Publication 3–0, *Doctrine for Joint Operations*, enables JFCs to establish AOs for land and maritime forces. Within these areas land and maritime commanders are supported commanders for maneuver, fires, and interdiction and thus establish the timing, priority, and effects of these operations to support their objectives. The publication's authors accept overlapping supported commander relationships that enable both land and maritime commanders to be supported in their AOs to accomplish objectives while simultaneously not constraining an air commander's ability to use assets JOA-wide (inside and outside AOs) to accomplish theater-level JFC objectives. *Fires* was used in the classical context of "fire support," which included artillery and close air.

The apparent contradiction of overlapping supported relationships was rationalized by merging land and maritime component targeting priorities with air and other JFC JOA-wide targeting priorities. Land commanders dictate the priorities of targets they submit for attack, but those are interwoven with the JOA-wide targeting priorities of JFCs. The result is that land and maritime commanders' air support requests are integrated with other JFC priorities within the AOs.

Objective-Oriented C²

The concept of an area of operation, a geographic approach to command and control, limits joint integration and increases requirements for resources including personnel, C² infrastructure, and weapons systems. Some in the Army and Marine Corps maintain that there must be a single supported commander who sets timing,

355th Communications Squadron (Jim Steele)

Checking equipment on EC–130E during Red Flag 99–1.

priority, and effects of all operations in an AO. This implies that a land commander should plan and control all land, sea, and air operations within a geographic area. That is tantamount to employing a joint task force within a joint task force using a commander and staff that specialize in only land combat to plan and control operations that span two or more mediums. The implication is that JFCs set objectives based on an area on the ground rather than on the effects that must be imposed on an enemy. In fact, these desired effects rarely conform to a geographically selected area usually rectangular in shape. Thus the geographic approach limits integration by partitioning among AOs the efforts of forces operating in the various mediums—on land, at sea, and in the air.

Even if objectives which transcend geography could be allocated to AO commanders, the total resources required to accomplish all air tasks for each AO would be greater than if airpower continued to be centrally planned and controlled by the air expert, the air commander. Airborne alert assets would be needed to react to the dynamics of targeting airborne and time sensitive threats in individual AOs, increasing the systems and personnel needed to achieve JOA-wide objectives. The need for command and control assets to coordinate air employment among AOs would grow. Thus C^2 that uses AOs fragments air employment, diminishes unity of command over air assets by air experts, and increases overall resource requirements.

joint integration is best achieved by organizing under functional component commanders

By contrast, C^2 through objective-oriented supported/supporting relationships integrates joint forces, ensures that commanders command and control activities in which they are expert, and optimizes assets across the AOR/JOA. Joint Publication 0–2, *Unified Action Armed Forces (UNAAF)*, clearly indicates that a supported commander is designated by virtue of tasks assigned and makes no mention of an area assigned. Defining support requirements based on tasks without regard to an arbitrary area requires component commanders to understand the nature of the JFC-assigned tasks of each component. This task-oriented support enhances joint integration. For example, the land commander must precisely relate deep targets to assigned land force objectives. Such targets can be anywhere in the battlespace if related to objectives. Likewise, by coordinating and deconflicting the intentions of the land commander, the air commander can attack targets located anywhere beyond the fire support coordination line (FSCL) to achieve assigned air component objectives. This C^2 arrangement enables the air commander to employ airpower throughout the AOR/JOA, maximizing the effectiveness of air assets. Thus objective-oriented C^2 enhances joint operations without partitioning the battlespace.

Objective-oriented C^2 improves force integration without partitioning land, sea, or air forces into AOs. Command and control of operations based on objectives instead of areas requires close planning and coordination among those forces operating in varied mediums. This is achieved by integrating objectives from a theater perspective rather than segregating them based on partitioning the battlespace. It applies across the board, not just in integrating land with air. In this era of high volume, increasingly reliable communications, ground forces of different services should not be commanded and controlled by zones, sectors, or AOs. Development of an accurate, real-time battlespace picture should reduce the need for these measures, which limit the employment of combat power to assigned areas, thus reducing the total power in any single area.

A more effective approach for ground components is to unify operations by developing the headquarters of a joint force land component commander to take advantage of all ground combat capabilities wherever and whenever needed. Land, sea, and air forces operating in separate AOs require duplicating staffs of experts for each medium at higher echelons to coordinate operations. Thus joint integration is best achieved by organizing forces under functional component commanders who are experts at employing forces theater-wide throughout a medium. It is less efficient to use multiple AO commanders to command forces operating in the various mediums.

E–6B TACAMO aircraft taking off for exercise.

Fleet Combat Camera Atlantic (Leland Comer)

JFACC Is Well Suited

The JFC role for all operations is to ensure that appropriate objectives are planned for each component and are integrated and prioritized to enable unified action toward accomplishing the mission. Although prospective JFC staffs are becoming increasingly expert at directly planning joint operations, their most effective capacity is to facilitate planning by component experts who will fight the various forces—land, sea, air, and special operations. As representatives of those who will execute the plans, component planners develop teamwork and understanding for the priorities and requirements of the joint operations as they plan together. Each knows JFC priorities of operations by phase and intimately understands his forces' supporting or supported roles as execution progresses through the phases.

Supported/supporting relationships vary by phase. Measures and benchmarks that indicate phase changes must be understood by all. Lateral as well as vertical communication of individual component progress through each phase is increasingly possible via modern command, control, communications, computer, and intelligence (C^4I) systems. Real-time iterative planning by staffs in continuous communications with other component staffs ensures continuous synchronization. JFC monitors all operations, interprets overall progress, synchronizes component objectives, and changes supported/supporting relationships as operations dictate. Thus, under JFCs, component commanders and staffs plan and execute together.

As commander of the preponderance of forces physically operating beyond FSCL, JFACC is best equipped to integrate all capabilities to fight deep beyond friendly ground forces. Not only have staffs evolved into an entirely joint organization, but they have developed refined capabilities to act and react to accomplish the JFC JOA-wide air objectives, including air support requirements for other components. Most information on an enemy comes to the air commander first through air and space capabilities. Forces that can influence events in these areas are largely air capabilities.

Until now JFACC has had tactical control of air capabilities except for helicopters. Great synergy could be realized if attack helicopter operations in conjunction with fixed wing operations were planned and controlled by JFACC through the theater air control system to attack airborne and ground targets beyond FSCL. If attack helicopter operations were integrated by JFACC, the only other significant capabilities operating deep would be SOF and ATACMS. SOF capabilities are integrated with air operations through the liaison element in the JFACC Joint Air Operations Center (JAOC), and the limited number of ATACMS are integrated through the battlefield coordination

detachment in the same operations center. Thus JFACC, with assistance from a joint and integrated staff, continues to be well suited to command and control the deep battle for JFCs.

Elimination of C^2 by AOs and the assignment of deep battle responsibilities to JFACC would greatly improve joint responsiveness and effectiveness in defeating air threats and enemy centers of gravity beyond the range of artillery. The extensive joint planning capabilities of JFACC would enable the optimization of all joint assets operating beyond FSCL and facilitate the extensive coordination required for air operations, air defense, and airspace control there. This preplanning would permit the optimization of force employment against targets that were specifically known. More importantly, JFACC could rapidly re-role and re-target assets against time sensitive targets, maximizing the sensor-to-shooter techniques most readily available to the air commander. Streamlining command and control of predominantly air assets operating beyond FSCL would improve the effectiveness and responsiveness of the entire joint force.

The road map for adopting this approach is largely in place. The air strategy cell in JFACC JAOC currently rationalizes JFC guidance and priorities with component priorities. Army, Navy, and Marine Corps planners work with air planners to achieve objectives that are deep—beyond the range of friendly artillery. TLAMs are currently planned as part of air operations. Some ATACMs are apportioned to JFACC for planning purposes in some theaters. And helicopters could easily be added to overall air operations. Service components would continue to have operational control over their forces while forces/capabilities made available to JFACC for deep operations would be in either direct support or tactical control as appropriate. Such forces, which might require control through the theater air control system, would normally be tactical control.

The emerging division of responsibility for using airpower deep beyond FSCL represents one giant step backwards in C^2 doctrine for the Armed Forces. All components have capabilities to accomplish objectives for JFCs. If components continue to develop overlapping capabilities to perform tasks in all mediums partitioned by AOs, the demand for resources will decrease the role of components. Establishing command and control by objectives, eliminating AOs, and assigning deep battle to JFACC would improve effectiveness and responsiveness of joint warfighting as well as save American lives and national treasure. **JFQ**

Attaching weapon to F/A–18 on board *USS Enterprise*.

U.S. Navy (Todd Cichonowicz)

Joint Campaigning in 2010

By RICHARD D. HOOKER, JR.

Fast forward to the year is 2010. America is at war with a regional adversary on another continent. Although outmatched in high-tech weaponry, the enemy is big, tough, and resolved to fight, aided by broken and urban terrain and a strong mobile missile force armed with nuclear and biological warheads. Weak in naval and air forces, its large armored field army is the trump card. It is a battle-hardened force twelve corps strong. Unlike Iraq in 1991 it is prepared to fight.

Satellite imagery reveals enemy operational reserves some 100 kilometers inland from the forward edge of the battle area, consisting of an elite tank corps, a special operations brigade, and an air division of fighters and helicopters. The theater commander identifies this force as the enemy center of gravity. It must be destroyed.

In the joint force of 2010, every service owns assets that can attack an enemy force. More to the point, every service has a mature and comprehensive doctrine for striking complex target arrays, not in the air, not on the sea, but on land. The Army has its own deep strike munitions fired from improved multiple launch rocket systems

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(MLRS) and Army Tactical Missiles (ATACMs) as well as next-generation, stealthy attack helicopters armed with fire-and-forget missiles. The Navy can attack with cruise missiles, carrier-based strike aircraft, powerful arsenal ships, and submarines armed with long-range munitions. The Air Force comes to the fight with air expeditionary forces boasting stealthy state-of-the-art strike fighters and bunker-busting precision munitions, all controlled from airborne and satellite platforms. Even the Marine Corps will join in with its own strike fighters.

General Dominante, the theater CINC, can use a variety of lethal systems to attack the target. If successful, he will destroy enemy reserves in a single stroke. Now, with the joint force poised to carry the fight to the enemy, the time for decision has come. At a planning conference Lieutenant General Brilliant, the Air Force component commander, opens the bidding. He asks for the fire support coordination line (FSCL) to be drawn 50 kilometers forward of the ground forces and that all systems that can attack enemy operational reserves be placed under his control as joint force air component commander (JFACC) to centralize the complex functions of targeting, airspace management, battle damage assessment, and reporting. After all, his service controls most of the air and space-based platforms that will perform these functions; and someone must provide the command, control, communications, computers, and intelligence (C^4I) to efficiently execute the interdiction battle. With minimal help from other services, the Air Force can break the back of the enemy. JFACC argues that the joint force must fight an interdiction battle before attacking the enemy on the ground in order to focus all strike assets for a crippling blow. With good fortune a land battle can be avoided altogether.

with minimal help, the Air Force can break the back of the enemy

Lieutenant General Hardcore, the Army forces commander, has a field army of two U.S. corps and one allied corps. He doubts that airpower alone can destroy enemy tank divisions and objects to losing control of his attack helicopters and rocket systems on the grounds that they are tactical assets. Though capable of deep strikes, they normally work for division and corps commanders who rely on their speed and massed fires to make decisive contributions in the main battle area. Furthermore, he argues that FSCL must extend forward to include the staging areas for enemy reserves since they can clearly move up and influence corps and division close fights within 48–72 hours—the doctrinal decision/action cycle for the fighting corps.

Hardcore feels he should control his "deep fight" to take out enemy operational reserves while the Air Force focuses on strategic targets. And he wants the CINC to designate him as joint force land component commander (JFLCC), with control of the Marine division, to ease the problems of targeting and boundary coordination and ensure unity of effort on the ground. He believes the mine and cruise missile threat makes amphibious landings unwise, leaving the Marines to fight alongside the Army anyway. Hardcore argues that coordinating fires and maneuver between Marine and Army units in a fast-paced ground battle demands functional command.

During the break, the Navy and Marine commanders share their misgivings. The naval component commander, Vice Admiral Spray, commands four carriers and a fleet of surface warships and submarines, while Lieutenant General Granite, the senior marine officer, commands a Marine expeditionary force of one division, one air wing, and one Marine expeditionary brigade. Clearly, neither the CINC nor his component counterparts fully grasp the potential of newly fielded sea-based systems to deliver crushing blows against land targets.

Once again, Army and Air Force commanders want to misapply the Marine air-ground task force by treating it as a division with some supporting aviation rather than an integrated air-ground team that fights as one entity. They believe new mine countermeasures and missile suppression systems make landings not only feasible but desirable. Undoubtedly, a functional land component command threatens the doctrinal employment of the Navy-Marine Corps team in littoral operations. With theater air forces preoccupied with strategic strikes deep in the enemy rear and Army forces focusing on close operations on the ground, Spray and Granite believe neither can devote sufficient attention to the intermediate interdiction battle. Fully interoperable with theater C^4I systems, with sophisticated sea-based reconnaissance systems and an entire array of surface, air, and submarine platforms, maritime forces are poised to deliver newly acquired muscle to devastating effect. The stage is set for dynamic operational maneuver from the sea. Will these forces get the chance?

After a vigorous presentation by the naval and maritime commanders, followed by spirited debate among the component commanders, the dismayed CINC tells the group that he will weigh their recommendations and announce his decision within 24 hours. Before retiring he contacts the Chairman, who reminds him of the importance of teamwork within the joint force and pledges his support for the ultimate decision.

Briefing at Twin Bridges, Korea, during Foal Eagle '98.

DOD (Renee Sitler)

As he drifts towards a troubled sleep, General Dominante reflects on the previous 14 years. In an amazingly short time, the U.S. military acquired an array of overmatching high tech systems. Though greatly outnumbered on the ground, with far fewer naval and air platforms than before, American forces are now at least a generation ahead in advanced weaponry. The equipment is good. But service visions about how to fight clash. With all services now focused on killing land-based targets, and each believing passionately in its own doctrine and capabilities, the job is tougher, not easier. Who is right?

Ties That Bind

Service visions about how to fight are based on service cultures, themselves derived from the defining experiences of World War II. That conflict—the greatest in history—created doctrinal and organizational foundations that ran broad and deep in the services, giving them institutionalized visions of warfare that decisively shaped how they looked at war.

During World War II the services enjoyed remarkable independence. The Army controlled the campaigns in North Africa, Italy, and northwest Europe; the Navy reigned supreme in the central Pacific and the battle for the Atlantic; and the Army Air Forces, by then all but independent, pursued strategic bombing campaigns virtually autonomously. The traditions of strategic primacy rooted in these defining events come from a time when the services slew giants and became giants themselves. These experiences do not belong to a distant past. The senior military leaders of the 1990s joined services led by men who had lived through the greatest war in history.

Korea and Vietnam shook but did not shatter those foundations. Throughout the Cold War the military departments focused on dominant themes derived from their World War II experiences which drove their budgets, doctrine, and force structure: decisive victory on land for the Army, command of the sea for the Navy, and command of the air for the Air Force. Though each service pursued secondary roles, these themes defined their institutional being. Interservice friction often occurred where roles overlapped but in general service primacy in the operational domains of land, sea, and air warfare kept the system at equilibrium.

Through the 1990s and beyond the Army saw its principal role as prompt and sustained land warfare and its core competency as large-scale ground combat. Only it had the heavy mechanized forces and air-transportable forced-entry units to conduct decisive operations on land, as well as the logistics to support sustained land campaigns. Though dependent on its sister services for strategic mobility and close air support, the Army saw itself as uniquely able to seize and control terrain.

Air superiority and strategic bombardment (nuclear or conventional) were defining roles for the Air Force. Its core competencies were large-scale air operations to gain air superiority and destroy strategic centers of gravity. Only the Air Force had the command and control, long-range bombers, fighter/attack planes, and refueling aircraft to conduct large-scale strategic bombing campaigns. Able to operate independently of the other services, it cherished a strong belief in airpower as the decisive instrument in modern war.

service visions stressed service concerns, played to service strengths, and supported service claims for primacy

The primary Navy role was sea control, with offensive operations in blue water and force projection as core competencies. Only the Navy had surface, submarine, and air forces to wage campaigns at sea. The only truly self-contained service, it (with its Marine Corps brethren) had its own strong land, sea, and air assets and saw command of the sea as a precondition for victory.

The defining roles of the Marine Corps were amphibious assault and forward presence. In wartime, however, it fought land battles along with Army forces, having made just one opposed amphibious landing in fifty years. Only the Marines had organic air-ground task forces trained and equipped to conduct ship-to-shore offensive operations.

Each service thus brought a distinct approach and a unique view of its role in the joint fight. Far from holding on to dead theories from the past, all possessed highly refined processes for evaluating traditional and evolving doctrines and technologies to keep pace with the changing face of war. Still, the services did not willingly discard the proven for the unproven. For the generals and admirals held accountable for victory or defeat, the only test that really mattered was battle.

The 20th century tendency to look at warfare from a distinct service perspective was not necessarily a weakness. Although the Armed Forces accepted the notion of joint warfighting broadly defined, the persistence of service-unique perspectives remained grounded in unique competencies and mastery of land, sea, and air warfare. Seen in this light, behavior which looked like parochialism was in fact an operating style based on a professional milieu of values, traditions, and experiences that made each service the best at what it did.

Nevertheless service visions contained distortions. They stressed service concerns, played to service strengths, and supported service claims for resources and primacy. While no service consciously ignored national security to pursue its own interests, each viewed its interests as central to national security.

Joint Vision 2010, a framework of joint operational concepts intended to harmonize service visions and doctrines, appeared in 1996. But new joint concepts competed with other priorities. Defense spending leveled off even as expensive systems came online, forcing the services into more downsizing and ever-fiercer conflict for disappearing resources. Impatient to modernize, the services embraced leading edge technology with impressive speed, hoping to offset loss of mass through information dominance and precision engagement. Rivalries intensified as the old rules regulating inter-service competition went by the board. All services suffered—some more than others—as force structure was trimmed to pay for advanced systems.

As the new century begins service visions about how to fight militate against clear decision-making despite the buildup of joint doctrine throughout the 1990s. Without a distinct consensus, thorny issues about control of joint fires,

Guarding B–2 during exercise at Whiteman Air Force Base.

1st Combat Camera Squadron (Benjamin A. Andera)

functional versus component command, control of space, and theater ballistic missile defense are finessed in the interest of service comity, already strained by the budget wars. Encouraged by joint successes in small-scale noncombat operations, America's Armed Forces focus on absorbing the latest technology, skirting one iron law: when information and ordnance cross service boundaries bad things can happen.

Back to the Future

The national military strategy of 2010 establishes a one major regional war requirement with a parallel emphasis on comprehensive global engagement. The services see themselves transformed in ways that challenge their very assumptions of being. Their positions harden as peacekeeping and humanitarian assistance training and deployments become core missions, especially for the Army and Air Force.

The United States faces several regional powers with large armies but weak naval and air forces. Its most likely conflicts are not about controlling sea lanes or airspace but defending land, populations, and resources. To remain relevant, all four services assume attack of ground targets as a primary mission. This transforming event—a sea change in the world of warfighting—largely escapes notice in such turbulent times.

For those willing to look closely there were warning signals. "Service visions" featured eye-catching layouts but were remarkably thin and sketchy. With brief nods to the *National Security Strategy* and *Joint Vision 2010*, they expressed service positions with scant mention of sister services. Though technology and the threat now focused all services on land targets, the actual mechanics of targeting, airspace deconfliction, theater ballistic missile defense, theater logistical architecture, intelligence dissemination, and a hundred other battlefield processes evaded precise definition and resolution.

The problem was not technology. Digitization provided a theoretical capability to share real-time intelligence down to the smallest tactical unit. Interactive and interoperable information-sharing technologies promised seamless data transfer across the force. Gone were the days when voluminous air tasking orders had to be flown from shore to ship. The real problem was uniquely human and very old. Its roots lay in the propensity of commanders to command and staffs to staff.

Organizational theorists had long known that a "law of unintended consequences" operated when information crossed organizational boundaries. Systems evolved over decades and centuries to filter out *noise* and reinterpret, analyze, and summarize—that is, to staff—incoming information to help commanders make decisions. While necessary, the staffing process changed the meaning and content of information in unpredictable ways. When refined, amplified, and summarized, informational inputs emerged as outputs in altered form. Since staffs served the commander first and subordinate units second, every boundary crossed represented another iteration of staffing. The net result was cascading versions of *processed* information backed up in headquarters decision cycles, which delayed its arrival to the fighting units in contact at the sharp end of the force.

Where information moved between command echelons within a service, some distortion was accepted as necessary and unavoidable friction. There, at least, units belonging to the same service spoke the same language, used the same jargon, and used the same tactics, techniques, and procedures. But when data and firepower crossed service boundaries, the problem increased exponentially.

Commanders played a special role in this process. The essence of command was perceived to be control of assigned units to accomplish a given mission. Because commanders were directly accountable for results they stressed centralizing command, implementing detailed SOPs, and publishing comprehensive orders. In all services, command meant well understood prerogatives not to be trifled with. Placing forces under commanders from other services risked misutilization and took them out of the "service" fight altogether.

Use of airpower proved the most vexing issue. Component commanders naturally preferred to use service air to support service missions. Air component commanders argued for centralized control of fighters and bombers as the best, most flexible way to exploit America's airpower advantage. Though similar in many respects, service aviation communities had important differences and modes of employment which offered many points of divergence. In peacetime, each tended to train in service regimes, not joint environments.

Effective control of ground forces was also a gnawing concern. In major conflicts—such as World War II, Korea, and Vietnam—joint operations with Army and Marine divisions led to friction. In Grenada, marines operated independently from Army units, hindering coordination for fires and schemes of maneuver. During Desert Storm, Army and Marine units were separated physically by inserting Arab Coalition forces between them and maintaining separate operational chains. Both services had distinct ways they planned, supported themselves, and integrated fires and close air support.

Tomahawk missile being launched, Desert Fox.

AH–64 seeking targets during exercise in Bosnia.

Fleet Combat Camera Atlantic (Richard Rosser)

U.S. Navy (Todd Cichonowicz)

In low intensity combat where air or ground units from different services operated side by side, service differences were muted by assigning different missions or geographical areas of responsibility and by implementing component rather than functional command arrangements. Behind the scenes, service tensions operated powerfully at the margins where core missions overlapped. Still, U.S. forces overwhelmed weak opposition in Grenada and Panama. No sharp defeats disturbed the delicately balanced relations between the services.

The Gulf War afforded a glimpse of things to come. Though largely ignored in the heady aftermath of victory, problems at points of collision such as JFACC control of Navy and Marine air, battlefield interdiction apportionment and targeting, and unified command of ground forces proved to be headaches for joint commanders. An outmatched opponent and a short war ensured that these problems did not receive closer scrutiny.

But for the first time in the post-Cold War era, naval and air forces joined with ground forces to fight a large armored opponent on land. That was the time to learn and apply fresh lessons from the battlefield. But following the war the military began a bitter cycle of drawdowns, base closures, budget battles, and restructuring that lasted a generation. Deemed more important, these issues took center stage.

Amid a welter of change, by 2010 the reorientation propels the services into head-on conflict. As the weapons which could attack operational and tactical land targets proliferate in every service, each component fights to retain battlefield control of its systems in accordance with service doctrine and culture. In the end the Armed Forces do not grasp the nettle. In the end the CINC has to.

The CINC Decides

"Ladies and gentlemen, the commander in chief."

"Good morning, folks." The CINC betrays none of his inner turmoil as he strides into the underground conference room and takes his seat, flanked by his deputy and component commanders. "First, let me update you on our progress. As you know, this has not been a replay of the Gulf War we engaged in as youngsters. These guys are fighting us hard and coming back for more. We've taken their air and navy out and fought our way into the theater. On the ground we're ready to move to the offensive. That's the good news.

"We can't afford to let this war drag out. We're losing public support."

"The bad news is that our troop losses, while they haven't crippled us, are far higher than expected. We can't afford to let this war drag out. We're losing public support.

"Another thing. Some of you have heard through the grapevine that we have problems in EASTCOM. We do—big problems. We may have to send you there and do this all over again. In fact the National Command Authorities are planning on it." Even in a room full of seasoned flags the involuntary gasps and curses are audible.

The CINC continues, "I've thought long and hard about the next phase of operations. You've all made persuasive arguments and they all make sense—from your point of view. Unfortunately, there's no consensus about how we should proceed since each component has its own perspective. I wish we could have done a better job of sorting this out when we had the time. It's late in the game to be figuring out our techniques and procedures on the fly. I pray that our young folks won't have to pay for our mistakes. But I'm afraid some of them will."

Around the table the officers tense as the CINC delivers his guidance. "Each of you have ongoing missions you'll retain. General Brilliant, you'll continue to attack the strategic centers of gravity we've identified. General Hardcore, now is the time to take the fight to the enemy and to punch through his front-line field forces. Admiral Spray, you will continue to protect our seaborne flank and attack targets ashore with your ships and planes. General Granite, I'm holding the Marine expeditionary brigade in reserve for possible amphibious operations. General Hardcore will take control of the Marine expeditionary force as the land component commander, with you as deputy JFLCC.

"We're now entering the critical phase of the war and I want to achieve a decision as quickly as possible. That means we take out enemy operational reserves in one go. I have decided to give the mission to JFACC and task him to attack and destroy those reserves. General Brilliant, your fight and our ground offensive will take place simultaneously. You have 48 hours to tell me what you need from across the theater to accomplish the mission. Except for the component commanders' minimum operational requirements for fleet defense and close air support, you'll control all our long shooters and strike planes. Once the ground forces close to within 50 kilometers of the reserves, control passes to JFLCC for the finish fight."

Leaning back in his chair, Dominante searches the faces of his commanders. "I know this decision won't fully satisfy any of you. I know your services have different ideas about how to fight. But I'm convinced this is the best option. Now it's up to all of us to figure out how to make it work. We have one week before kickoff. Let's get going."

As they file out of the room the CINC turns to his deputy. "If we blow this it could mean the end of America as a superpower. And I just told my warfighters something none of them wanted to hear. What does that make me?"

The deputy smiles at his old friend. "It makes you a general."

"Now let's go win this war."

Joint warfighting promises optimum efficiency for a high quality but smaller force. Its goal is to:

- maximize the capabilities each service brings to the fight
- synchronize the joint fight by integrating land, sea, amphibious, air, and space forces

Demonstrating missile launcher for Russians, Bosnia.

55th Signal Company (Christopher Kelley)

Harrier preparing to take off from *USS Boxer*.

13th Marine Expeditionary Unit (Branden P. O'Brien)

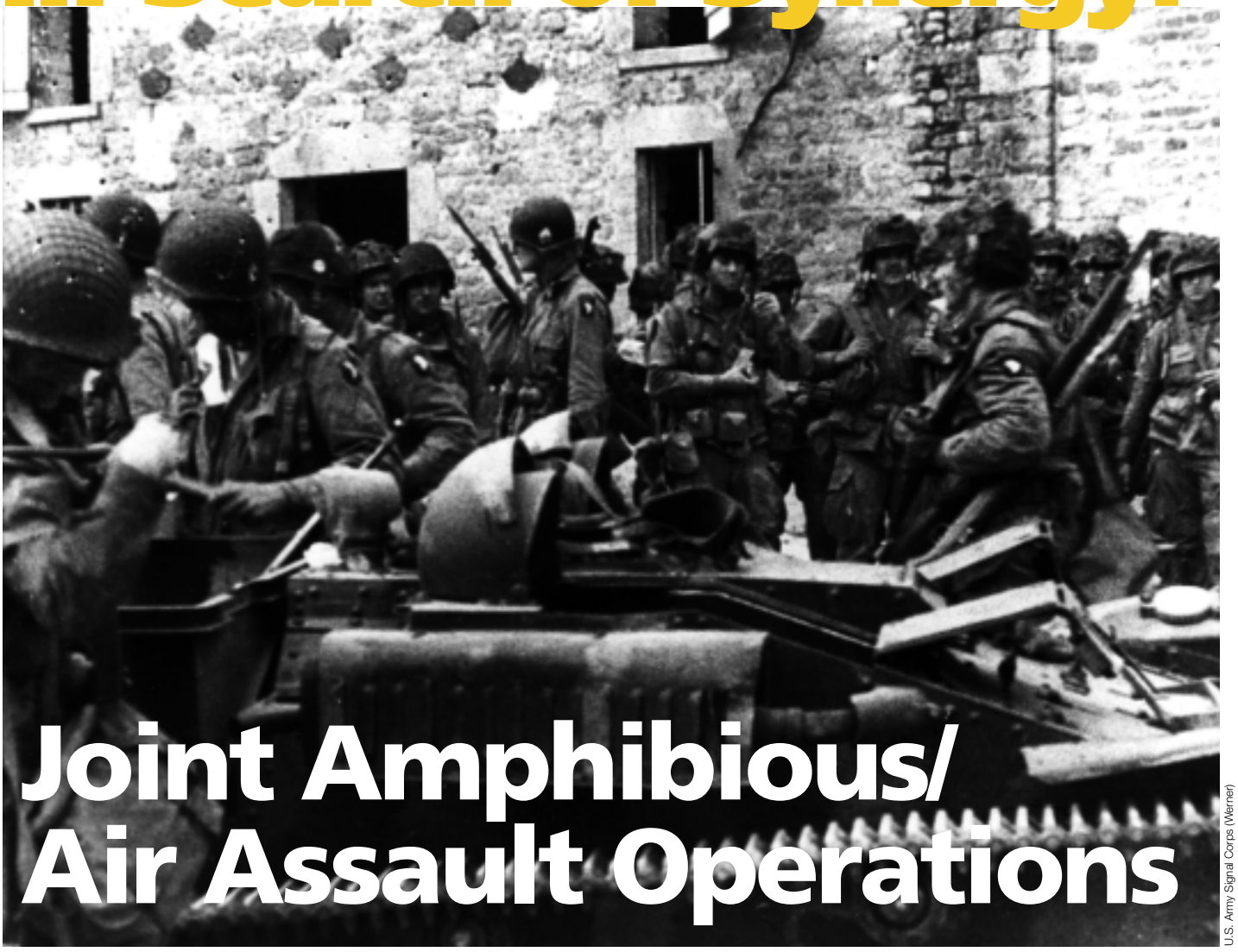
■ minimize inefficiencies caused by crossing service boundaries

■ give the joint force a common vision of how joint forces are employed to achieve national military objectives.

Most friction in joint operations is caused when two or more services are tasked to employ forces together in the same operational medium. This will now be the norm. The principles of concentration and unity of effort will drive the joint force toward functional command (a JFACC or JFLCC) for more effective control and coordination of complex operations. However component commanders will resist loss of control to functional commanders because it means ceding control over a major part of their organization, they lack faith that their assets will be properly employed, or such use diverts component assets from other missions.

Service friction will intensify as the Navy and Air Force are reoriented on ground targets, given the absence of peer competitors among the naval and air forces of our most likely opponents. The challenge is to temper this friction not by replacing unique service doctrines and competencies with equivalent joint ones but by promoting complementary service doctrines within the framework of a common doctrine for joint operations. By answering hard questions now, the Armed Forces can take the decisive step to move *Joint Vision 2010* from concept to reality. **JFQ**

In Search of Synergy:



Joint Amphibious/ Air Assault Operations

U.S. Army Signal Corps (Werner)

Normandy, 1944.

By JAMES B. BROWN

On June 6, 1944, the 101st Airborne Division dropped behind enemy lines and seized key bridges and roads to block coordinated Nazi counterattacks against the amphibious landings at Normandy. The operation was complicated by missed drop zones and poor night illumination, which protected jumpers but caused fatal crashes of gliderborne troops—including the assistant division commander. Regardless of cost, the appearance of paratroopers in the enemy rear created massive confusion and contributed greatly to the success of the D-Day landings.[1]

On June 6, 20XX, the 101st Airborne Division (Air Assault) conducts a deep strike and air assaults 200 km behind the shoreline to seize terrain and impose operational shock on an enemy commander and block his forces from influencing the amphibious operations area of the 2d Marine Air-Ground Task Force as it seizes the beach, airport, and capital of country X. The MAGTF then moves swiftly to bring ashore ships

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U.S. Navy (James G. McCarter)

Light armored vehicle landing, RIMPAC '98.

that deliver mechanized forces of the 1st Marine Expeditionary Brigade. These forces link up with the 101st and carry the campaign into its final phase.

In World War II the United States took advantage of its insular geography and massive industrial strength. More significantly, it took the time to fully develop the force structure needed to wage the war of annihilation that defeated the Axis.[2] The Army spent two years preparing to invade Europe. Army amphibious operations were first developed for the capture of North Africa in November 1943 in Operation Torch before being rehearsed and perfected for the Normandy invasion of June 1944. Future conflicts will not offer such luxuries.

Technology has increased the ability of enemies to bring conflict to our national airspace and our interdependent global economy, greatly reducing response time and thus our traditional geographic and industrial advantages. The impact of emerging technologies practically guarantees that future amphibious operations will be come-as-you-are. It is thus critical that our forces form and rehearse joint force packages to wage conflicts abroad without the traditional preparation time. The 101st Airborne Division and Marine Corps are ideally suited to create a joint force to apply what the Commandant of the Marine Corps calls operational maneuver from the sea (OMFTS).

Marine Supremacy with Deep Support

The tenets of OMFTS call for a force that can simultaneously engage an enemy "across his full operational depth."[3] Attacking throughout the battlespace creates an "operational shock" that stuns an enemy commander, rendering him unable to make sound decisions or to command and control his forces. Continual improvements in doctrine, training, and matériel combined with a relentless commitment to excellence have secured global supremacy for the Marine Corps in amphibious operations.

Currently, the Marine Corps can seize an amphibious landing area with seaborne troops brought ashore at speeds of over 40 knots aboard landing craft air cushion (LCAC) landing assault vehicles in concert with heliborne troops who conduct air movement to shore. Under the safety of naval fires (missiles and guns) and Marine and Navy air, marines secure the amphibious area of operations for RORO ships that can deliver a prepositioned brigade of mechanized marines ashore to expand the lodgment and attack deep into the enemy rear. At the same time, the recently established prepositioned Army armored brigade afloat can be brought ashore for passing through Marine forces to sustain the deep fight.[4]

82d Airborne jump, Centrazbat '97.

1st Combat Camera Squadron (David L. Wilcoxson)

USS Belleau Wood and *USS Essex* in Arabian Gulf.

31st Marine Expeditionary Unit (R.M. Katz)

Cuts in the Marine budget, force structure, and procurement of LCACs and equipment have increased the vulnerability of the amphibious operations area to massed mechanized counterattack. The battle at the beachhead can hang in the balance and will ultimately go to the commander who can bring more forces to the point of battle. The 101st Airborne Division was first used to prevent this very threat at Normandy in 1944 and can blunt it again.

the battle at the beachhead will go to the commander who can bring more forces to the point of battle

The division possesses unique deep strike and armor killing capabilities with its 72 Apache and 32 Kiowa Warrior helicopters. Three air assault infantry brigades supported by three assault helicopter battalions (90 UH–60 Blackhawks) and a medium lift helicopter battalion (48 C–47D Chinooks), divisional artillery with fifty-four 105 mm and eighteen 155 mm howitzers, and combat support and combat service support units can air assault up to 350 km into the enemy rear to block counterattacks against the amphibious objective area (AOA).[5] The capability to isolate a foe from lines of communication and reinforcements can ensure immediate success at the beachhead and help transfer the focus from the amphibious area to the enemy center of gravity.

The similarities between this mission and the first combat mission of the 101st Airborne Division are striking. However, revolutionary developments in attack helicopter technology and night fighting have now ideally suited the 101st for tank killing (a previously endemic weakness of airborne forces) and night combat (also a weakness due to command and control problems).

To grasp the capabilities of the 101st to support amphibious operations, it is important to understand the four phases of an air assault operation. They are often misunderstood by fellow Army officers who, although familiar with the equipment involved, frequently view the 101st Airborne Division as a light division with extra helicopters.

Directing amphibious landing, RIMPAC '96.

U.S. Navy (Felix Garza, Jr.)

Landing craft off Sardinia, Dynamic Mix '98.

U.S. Navy (Paul W. Brown)

Air Assault Operations

The four phases of an air assault are setting the conditions, air assault, expanding the lodgment, and linkup. They are more akin to amphibious operations than to traditional Army operations. Thus Colonel Neil Nelson, a chief of staff of the 101st, referred to air assault as "amphibious operations of the air." In fact, recent exercises where the division has supported Marine operations have demonstrated that Marine leaders have an inherent understanding of air assault, which makes for efficient working relations.

The first phase, setting the conditions, is the deep strike conducted with the combined effects of deep attack helicopter strikes, artillery raids, and deep coordinated fires of higher headquarters to destroy enemy forces that are either in the objective area of the air assault or close enough to influence the battle there. This phase is not time driven but rather focuses on results. An air assault will not be launched until the right conditions are achieved. This is perhaps the most difficult phase for Army officers to understand since many of their operations are synchronized primarily on time and not events. Defining the conditions depends on an intricate intelligence preparation of the battlefield that leads to identification, targeting, and destruction of enemy forces. Once the conditions are met they are constantly reevaluated until the commander determines that they have been set (from one to three days). The assault is then launched.

defining the conditions depends on an intricate intelligence preparation of the battlefield

The air assault, like the deep attack, is most frequently launched at night and brings the division's combat forces into the rear where they seize and hold key terrain to disrupt enemy lines of communication and cut off reinforcements from the front lines. The 101st Airborne Division typically deploys a full brigade with its combat support elements (field artillery, air defense artillery, engineer, intelligence, chemical, military police,

and medical). The remaining brigades deploy for further operations later that day or on successive nights. The first brigade task force to air assault is primarily responsible for securing the objective area and facilitating the air assault of the remaining brigades which then expand the lodgment.

Third, expanding the lodgment, is enlarging the AOA to secure all the assault objectives. It consolidates follow-on forces of the 101st Airborne Division into the objective area to complete the mission and prepare for future operations.

The final phase is linkup, whereby friendly forces break through enemy lines to join with the 101st and are passed rapidly forward through its objective area to fight deeper into the enemy rear. During all phases, Apache and Kiowa Warrior attack aviation relentlessly strikes to strip an enemy commander of fire support, air defense, and armored fighting systems across an expanding arc of influence known as the outer ring of the air assault operational area.

Synergy in the Air

The Marine air wing that supports amphibious operations also targets enemy forces that move to influence the AOA. The current wing includes a mix of FA–18 Hornets and AV–8B Harriers. Future wings will include short take-off and landing aircraft that will also focus on the deep fight. One of the most critical areas of an air assault operation is synchronized control of air assets during the conditions setting and assault. Marine amphibious commanders are extremely sensitive to the integration of fixed-wing assets to support deep attacks. The synergy of combining three attack aviation battalions of the 101st with a Marine air wing will result in more deep targets being eliminated and may free Marine fixed-wing assets to support the close fight in the AOA.

The 101st Airborne Division battle staff already has experience working as a subordinate staff to commanders of Marine expeditionary forces in major staff exercises involving both force projection and noncombatant evacuation. These drills have demonstrated the ability of Marine leadership to leverage the division's capabilities. The inherent similarities between air assault and amphibious operations, as well as the elite aura of these two organizations, create a unique joint force package on the staff level. It is now time to take the experiment a step farther and incorporate deep air assault capabilities in Marine amphibious operations. The projection of the 10th Mountain Division (Light) from the aircraft carrier *USS America* into Haiti in 1994 showed what can result when we break down traditional service walls in search of a new synergy. An Army official aboard the carrier during the operation affirmed the need for practice: "The key to this operation is combat rehearsals. You have to make it work before you show up in theater and are trying it for the first time."[6]

The purpose of supporting amphibious operations with the 101st Airborne Division is to apply operational shock against an enemy commander while freeing Marine assets to concentrate on the AOA—with a significantly reduced threat of counterattack from enemy forces outside the area. This concept is well grounded in the OMFTS principles that have become the tenets for future amphibious employment. The 101st Airborne Division, although most often outnumbered and fighting deep in the enemy rear, has never lost a battle. Likewise, the Marine Corps has never failed to attain an objective. It is time to bring these elite forces together for further experimentation toward a new synergy. The results will no doubt be historic for these proud forces and devastating for our enemies. *Semper fi! Air assault!* JFQ

NOTES

[1] For an account of the division during World War II, see Leonard Rapport and Arthur Northwood, Jr., *Rendezvous with Destiny: A History of the 101st Airborne Division* (Sweetwater, Tenn.: 101st Airborne Division Association, 1948).

[2] Russell Weigley theorizes that the American approach to war is annihilation, a strategy that relies on the synergistic effect of marshaling resources in an overwhelming military machine that can destroy an enemy armed force. See *The American Way of War* (Bloomington: Indiana University Press, 1977).

[3] Charles C. Krulak, "Operational Maneuver from the Sea," *U.S. Naval Institute Proceedings*, vol. 123, no. 1 (January 1997), pp. 26–31.

[4] On the brigade afloat see James F. Pasquarette and William G. Foster, "An Army Heavy Brigade Goes Afloat," *U.S. Naval Institute Proceedings,* vol. 120, no. 5 (May 1994), pp. 89–92.

[5] In the Gulf War, the 101st Airborne Division attacked 420 km into the Iraqi rear using forward operating bases (Cobra and Viper) which cut off forward Iraqi units from reenforcement and retreat. The division could provide the Marines similar support in amphibious operations. See Edward M. Flanagan, Jr., *Lightning: The 101st in the Gulf War* (Washington: Brassey's, 1994).

[6] Interview with Rick Cantwell, December 31, 1996.

Power Projection and Countermine Operations

U.S. Navy (August Sigur)

Marine preparing to set contact mine.

By ANTHONY E. MITCHELL

The Quadrennial Defense Review, Commission on Future Defense, National Defense Panel, and other efforts have reviewed and projected the security environment and force requirements that will make the military effective in the 21st century. The Navy has been leading that revolution by disengaging from Cold War thinking and redirecting its systems and procurement in support of *Forward . . . from the Sea*. Unfortunately, this shift brings risks to critical programs—particularly countermine operations—which, if not corrected, could be tragic in the event of war.

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Reshaping Capabilities

The strategic focus of the military is evolving. As the force changes, some less glamorous but vital roles and missions on the periphery must also evolve. The Air Force is searching for a niche in forward presence, the Army is moving from a reliance on forward bases to enhancing its power projection capabilities, and the Navy-Marine Corps team has implemented the strategy in *Forward . . . from the Sea*.

Once logisticians relied heavily on host nation support to enhance the transportation and support functions of the Reserve components. Now the stockpiles of equipment and arms that once filled the prepositioned overseas matériel configured to unit sets (POMCUS) depots of Europe are afloat, ready to be dispatched to any

55th Signal Company (Alfredo Barraza, Jr.)

Croatian police divers inspecting hull of *USNS Soderman*.

contingency. The Navy-Marine Corps team is continually expanding its power projection capacity with new combatant and amphibious ships and associated weapon systems. Maritime prepositioned assets continue to grow. Even the Air Force has placed some of its logistics afloat in prepositioned ships for surge on short notice.

The Gulf War was the first major post-Cold War test of time-critical power projection. Desert Storm demonstrated that power projection is no simple task. Quickly deploying heavier, larger, and more maintenance-intensive equipment was the norm in the Persian Gulf. Nine hundred-foot roll-on/roll-off (RORO) ships were continually unloaded at two Saudi ports. Luckily for U.S. forces, Saudi ports are some of the best in the world, and the approaches from the Persian Gulf were relatively secure from interdiction from the sea before and during the Iraqi occupation of Kuwait. That security advantage was significant because the civilian-manned RORO ships depend solely on combatant escorts for protection. The experience of Desert Storm raises an important question for the future. Since mobility is the key ingredient in power projection, conflicts that lack a cooperative host in theater will strain the planning and execution of our strategy. How can we ensure that we find the same level of infrastructure and security we enjoyed in Saudi Arabia while planning for future conflicts?

mine warfare has neither maintained sufficient visibility nor obtained the budget increases to function fully

The Mine Warfare Threat

There is much we can do to safeguard our sealift assets in littoral power projection operations. One area in need of significant improvement is mine countermeasures. Iraq had only three noteworthy successes against the allies in the Gulf War. One was the Scud missile hit on an Army dining facility in Saudi Arabia that caused numerous casualties. The other two were mines that took *USS Princeton* and *USS Tripoli* out of the war for the duration. These successes, albeit small, were noticed by rogue states and hostile governments. The enhanced Patriot missile system and the Navy's Aegis weapon system, now capable of providing theater ballistic missile defense, have made further Scud success unlikely. Unfortunately, mine warfare has neither maintained sufficient visibility nor obtained the budget increases to function fully in our expanded power projection strategy. In his primer on mine warfare, Gregory Hartmann summarizes, "Mines not only sink and damage ships as other weapons can, but their effectiveness is also measurable in terms of the delay created in enemy operations."[1] Unlike Desert Storm, future conflicts may suffer strained mobility if mines are deployed and the theater lacks cooperative host governments.

In the current economic climate, few nations can develop and finance a navy or air force that could challenge the United States as a peer rival. But wholesale use of naval mines could be an easy, effective, and low-cost counter to a strong power projection force. If our shortfalls in mine warfare remain uncorrected, how might potential aggressors take advantage of our inaction?

Every type of naval mine is available in the global marketplace. At the Paris International Naval Exposition in 1996 manufacturers offered many such weapons for sale, from sophisticated bottom influence mines to simple contact mines enhanced to reduce sonar detection. Many despots and unstable states have stockpiles of naval mines. As Western nations increase the sophistication of weapons, potential enemies unable to keep pace turn to simple, cheap, yet proven counters.

Studies of World War II through Desert Storm recognize shortfalls in mine countermeasures and recommend a greater application of resources.[2] Navy planners and designers are developing an organic mine warfare capability within the surface force. While that may increase mine detection and avoidance in cruisers and destroyers, it must not be deemed a panacea that diverts resources and training from dedicated mine warfare forces—which now are headed toward obsolescence. Before dismissing dedicated mine warfare forces becomes policy and its funding is reprogrammed, it is prudent to conduct a joint conference outlining mine warfare requirements

Fleet Combat Camera Group Pacific (Jonathan Guzman)

Royal Navy mine countermeasures squadron, Arabian Gulf.

U.S. Navy (Christopher Halloway)

Detonating mine, RIMPAC '98.

for the future versus current capabilities. Additionally, wargaming forced entry into an undeveloped theater may further highlight unexpected shortfalls in force protection and logistics.

A Languishing Force

There has been intense pressure to mainstream mine warfare to support power projection and *Forward . . . from the Sea* strategies. The Mine Warfare Command has been proactive in both recognizing its new responsibilities and adapting to our changed strategic focus. Unfortunately, few members of the budget and planning communities in the Pentagon or Congress recognize the overshadowing importance of a robust mine warfare capability in enabling our future power projection force. Funding and development should be of primary concern to all services, yet as in the past we see the dedicated mine warfare force beginning to languish.

Interest on the part of Secretary of Defense William Cohen in mine warfare is well documented, but reductions in defense spending and a simultaneous shift in strategy have created a spending dilemma.[3] Concern at the level of the Secretary is encouraging; but as J.M. Martin pointed out in 1991:

During the decades associated with 13 wars and lesser hostilities since World War II where sea mines have been used, U.S. preparedness for sea mine warfare has been neither uniform nor continuous. Rather, support for this endeavor in both the Department of Defense and the Congress has been marked by peaks and valleys, a fluctuating process which has caused the U.S. Navy to enter conflicts inadequately prepared for mine warfare.[4]

Mine warfare needs have been recognized periodically by policymakers and in many articles identifying deficiencies. The question is where to get funds to enhance mine warfare training and technology in an environment of reduced defense expenditures.

Building for the Future

A possible way to bridge budget shortfalls would be to fund critical countermine programs

U.S. Navy

Mine countermeasures support ship *USS Inchon*.

through an apportionment of any cash excesses generated by the DOD working capital fund.[5] That would require adjusting current rate structures to allow for a joint sealift protection apportionment that could be used to cover cost overruns and unexpected expenses in active programs, especially research and development. Other funding sources also need exploration. Considering the power projection strategy of the future, all the services are guaranteed to benefit, increasing funding to countermine capabilities.

Requirements for dedicated mine countermeasure forces should be set by the total surface force. One approach is to design mine warfare ships that are multicapable. By adding a weapon system and using new technology in degaussing and metallurgy along with composite materials to control magnetic signature, the next-generation mine countermeasures ship could become a regular deployable asset and take on additional missions such as law enforcement operations and maritime interdiction operations. Transferring those tasks from overtaxed cruisers and destroyers would ease the cost and time strains of maintaining blue-water combatants, increasing their combatant readiness by allowing them to focus on training and operating predominantly in their primary warfare missions. Such missions would then be executed by smaller craft like mine warfare ships which require less fuel and fewer personnel. Furthermore, an American designed and built corvette-sized ship may inspire foreign military sales that would bolster our shipbuilding industry.

requirements for dedicated mine countermeasure forces should be set by the total surface force

Budgeteers should realize that mine warfare is no longer a strictly Navy but a joint problem that challenges the power projection capability of all services. Funding new technologies and training is critical to a robust capacity. We must carefully consider the follow-on to current mine countermeasure ships, MH–53 helicopters, and the mine warfare command and control ship *USS Inchon*. Furthermore, mine warfare must continue to occupy the mainstream of defense thinking. The designs and technology that make dedicated mine warfare ships appropriate for other surface force missions are at hand. Without an infusion of funding and continued support for development, capabilities like mine warfare that receive little interservice attention during major strategy shifts may prove to be our Achilles heel. **JFQ**

NOTES

[1] Gregory K. Hartmann and Scott C. Truver, *Weapons That Wait: Mine Warfare in the U.S. Navy* (Annapolis: U.S. Naval Institute Press, 1991), p. 235.

[2] Lack of attention to mine countermeasures is a recurring theme in post action reports. See also Tamara Moser Melia, *"Damn the Torpedoes": A Short History of U.S. Naval Mine Countermeasures, 1777–1991* (Washington: Naval Historical Center, 1991) and Hartmann, *Weapons That Wait*, as well as various articles in *U.S. Naval Institute Proceedings*.

[3] Roman Schweitzer, "Cohen's Message on Mine Warfare Understood by Navy Senior Leaders," *Inside the Navy*, November 10, 1997, p. 1.

[4] J.M. Martin, "Desert Storm: We Still Haven't Learned," *U.S. Naval Institute Proceedings*, vol. 117, no. 7 (July 1991), p. 68.

[5] The defense working capital fund was formally known as the defense business operating fund. One of its business areas is Navy research and development.

Grenada, Panama, and Haiti:

Moving inland, Grenada.

U.S. Army (Jon E. Long)

Joint Operational Reform

By RONALD H. COLE

Three joint operations in the Caribbean—Urgent Fury in Grenada (1983), Just Cause in Panama (1989–90), and Uphold Democracy in Haiti (1994–95)—reveal substantial limits as well as progress in joint planning and execution as a result of the Goldwater-Nichols Department of Defense Reorganization Act of 1986.

Questions on the effectiveness of joint operations began in Vietnam. After retiring General David Jones, USAF, who was Chairman of the Joint Chiefs of Staff from 1978 to 1982, described that war as "our worst example of confused objectives and unclear responsibilities in Washington and in the field. Each service, instead of integrating efforts with the others, considered Vietnam its own war and sought to carve out a large mission for itself."[1]

Jones had experienced the fallout from a joint operation conducted in April 1980 that failed to rescue American hostages from the U.S. embassy in Tehran. Hampered by lack of joint training and inadequate command and control, the effort was aborted after the mechanical failure

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of three helicopters. As a Navy helicopter prepared to return, its rotor struck the fuselage of an Air Force transport; eight men died and four were severely burned.

If the Vietnam War and the Iran rescue mission provoked thought on joint reform, events in Lebanon and Grenada in late 1983 sparked action. In October of that year a terrorist truck bomb killed 241 marines in Beirut. The concentration of all marines in one building and restrictions on aggressive patrolling made them easy targets. An investigation revealed that a cumbersome chain of command, unclear objectives, and inconsistent guidance placed them in unnecessary danger.

lack of detailed intelligence on Grenadian defenses compelled planners to opt for a sudden attack with overwhelming force

Grenada

It was, however, the operational mishaps in Grenada that established the clearest need for reform. On October 12, 1983 militant Marxists overthrew a moderate Marxist government on the island of Grenada and executed its leaders. The Department of State informed the Joint Staff of the danger to six hundred American medical students living in the country. Determined not to repeat the humiliation of Iran, on October 20 the National Security Council (NSC) ordered planning for a military operation to evacuate the students.[2]

Although the joint task force (JTF) accomplished its mission, things went wrong. Troops had to use tourist maps, Army and Marine operations were poorly coordinated, and lack of radio interoperability led to casualties among the civilian population and friendly forces. In the words of one member of Congress, "The mission was accomplished, but it was a good deal less than . . . totally successful. . . . It took some luck, an overwhelming force ratio, and we lost more equipment than we should have."[3]

General Vessey.

At the NSC meeting the Chairman of the Joint Chiefs, General John Vessey, USA, warned that Grenadian soldiers and armed Cuban construction workers might resist. He persuaded NSC to expand the rescue mission to include disarming the Grenadian troops (1,200 regulars and 2,000–5,000 militia), deporting the 250 Cuban construction workers, stabilizing internal affairs, and maintaining the peace. He also persuaded Secretary of Defense Caspar Weinberger to direct the commander in chief of U.S. Atlantic Command (CINCLANT), Admiral Wesley McDonald, to divert the *USS Independence* carrier battle group and Marine Amphibious Readiness Group 1–84 to the Caribbean for possible intervention.

On October 22 Weinberger inserted Vessey into the operational chain of command. Under the Chairman's direction the Joint Staff coordinated CINCLANT planning with the services. Lack of detailed tactical intelligence on Grenadian defenses compelled planners to opt for a sudden attack with overwhelming force. They hoped swift seizure of key enemy command and control facilities coupled with the quick removal of potential hostages would end the crisis with few casualties.

Grenada is twice as large as the District of Columbia with varied terrain and targets. The nearest available force, a battalion landing team of 1,800 marines, was too small to conduct a *coup de main*. The Joint Chiefs agreed to a joint operation whereby Army airborne troops would be flown from Fort Bragg and naval forces would deter Cuban interference and provide air and gunfire support.

During a review by the Joint Chiefs of the CINCLANT plan on October 23, Vessey drew a tactical boundary dividing Grenada into northern (Marine) and southern (Army) sectors. He also selected two seasoned officers to help U.S. Atlantic Command conduct the joint ground operation. With its focus on maintaining the sea lines of communication with Europe in the event of war, the command lacked experience in directing ground combat involving Army troops with Air Force support. Major General Norman Schwarzkopf, USA, who then commanded the 24th Infantry Division (Mechanized), would serve as advisor (later deputy commander) to the JTF commander, Vice Admiral Joseph Metcalf. Vessey sent the vice director of the Joint Staff, Major General George Crist, USMC, to coordinate the ground operation with the efforts of the United Nations and the Organization of Eastern Caribbean States to reestablish democratic rule.

The operation began at 0500 on October 25. The Marines faced little resistance at Pearls and Grenville on the east side of Grenada. A malfunction in the lead C–130 delayed the drop of the Army Rangers at Point Salines Airport for over thirty minutes. After a fire fight the Rangers subdued the Cubans at Point Salines and rescued the students at the nearby True Blue campus.

Fully alerted, Grenadian troops in St. George's discovered and trapped a SEAL team attempting to evacuate the governor general. Schwarzkopf persuaded the JTF commander to send marines to rescue the SEALS and the governor general. He also

DOD

Soldiers taking cover in Panama.

DOD

Students being evacuated from Grenada.

persuaded a Marine colonel to lend the support of his helicopter squadron to Army Rangers to rescue a second group of students at the Grand Anse campus outside St. George's.

In the end U.S. forces overwhelmed the opposition, rescued 720 U.S. and foreign citizens, restored popular government, and eliminated a strategic threat to U.S. lines of communication. Urgent Fury cost the United States 19 killed and 116 wounded; Cuban forces lost 25 killed, 59 wounded, and 638 captured. Grenadian forces suffered 45 killed and 358 wounded, and at least 24 Grenadian civilians were killed.

Tactical mistakes marred the operation. On October 25, lacking DOD maps and recent tactical intelligence, Navy A–7 Corsairs bombed a mental hospital near the Grenadian command post at Fort Frederick and killed 18 patients. Two days later, an air-naval gunfire liaison company team failed to coordinate with the 82d Airborne Division, and Corsairs attacked a friendly brigade headquarters wounding 17 soldiers. Without adequate maps, intelligence, and organic helicopter gunships, the 82d cautiously advanced across the southern half of the island while the Marines raced over the northern part in an uncoordinated action.

Panama

The intervention in Panama shared a Caribbean locale with Grenada, but its causes differed markedly. The deterioration of the Soviet Union heralded the rapid decline of Soviet and Cuban influence in the region. New problems threatened U.S. interests—drugs flowing from Colombia via Panama, danger to American citizens in Panama, and restricted access to the canal.

Panama was the base of U.S. Southern Command (SOUTHCOM), a predominantly Army organization led in 1988–89 by General Frederick Woerner, USA. Anticipating a hostage situation or interference with use of the canal, Woerner initiated a contingency plan for operations against the dictatorship of Manuel Noriega. Named Blue Spoon, the plan envisioned gradually doubling the 12,000–13,000 U.S. troops with reinforcements from the United States. The force would then mount operations to intimidate or overthrow Noriega and the Panama Defense Forces (PDF).[4]

DOD

Guarding prisoners, Panama.

By summer 1989 relations between the countries had worsened. Dissatisfied with Woerner's incremental approach, President George Bush turned to the Chairman, Admiral William Crowe, who recommended Woerner be replaced by General Maxwell Thurman, USA. Thurman, with a reputation for toughness and efficiency, chose the commander of XVIII Airborne Corps, Lieutenant General Carl Stiner, USA, as primary joint warfighter with responsibility for planning and conducting the operation. Thurman instructed the SOUTHCOM operations director, Brigadier General William Hartzog, USA, to revise Blue Spoon to reflect a strategy of *coup de main* rather than escalation. By October Hartzog had expanded the overall force to 27,000 and compressed the time to move reinforcements to Panama from three weeks to five days.

Rather than asking Thurman to cobble together a force of equal parts from each service—a frequent practice in earlier operations—the new Chairman, General Colin Powell, USA, supported Thurman's decision to place an Army general in charge of a predominantly Army joint task force. The 22,000 soldiers would be augmented with 700 sailors, 900 marines, and 3,400 airmen.[5] Hartzog gave 27 specific objectives to five special operations and four conventional operations task forces (TFs). Although each TF was composed largely of troops from a single service, nearly all were supported by elements from others. For example, Rangers comprising TF Red included Air Force special tactics and Marine/Naval gunfire liaison teams, and all TFs depended on Air Force fixed-wing airlift and close air support.

In late September 1989 Powell met with Thurman and Stiner to discuss plans. He agreed to compress the flow of forces into Panama from three weeks to three days, seize Noriega, and dismantle the PDF. Stiner would report through Thurman and Powell to Secretary of Defense Dick Cheney and the President. In strictly tactical matters during the first few days, Powell, Cheney, and Bush would avoid the micromanagement that had characterized the Iranian hostage rescue attempt and Urgent Fury.

On December 20, four days after Panamanian soldiers killed a marine and molested a Navy officer and his wife, General Thurman executed the plan that SOUTHCOM and its subordinate commands had been revising and rehearsing for six weeks. The plan included rules of engagement that carefully restricted heavy firepower. Neither Powell, Thurman, nor Stiner wished to needlessly risk lives or property.

Shortly after midnight, Rangers of TF Red and troops of the 82d jumped over targets from Rio Hato in the west to Fort Cimarron in the east. Their primary mission was to isolate Panama City

while TF Bayonet encircled and neutralized the PDF headquarters at the *Comandancia*. After a three-hour fight the headquarters was in U.S. hands. Meanwhile TF Atlantic secured the canal; and in the western suburbs of Panama City Marine TF Semper Fi blocked approaches to the Bridge of the Americas to prevent PDF forces fleeing Rio Hato from reinforcing the *Comandancia*. With key installations taken and Noriega in hiding, central control of PDF collapsed the first day. Fighting flared sporadically as U.S. forces overcame pockets of resistance.

Powell became directly involved to ensure that actions in Panama meshed with political and diplomatic goals

As Stiner's force attained its objectives, General Powell became directly involved in military operations to ensure that actions in Panama meshed with the administration's political and diplomatic goals. Goldwater-Nichols permitted the Secretary to use the Chairman to transmit operational directions and the Chairman to act decisively without consulting the Joint Chiefs.

Powell told Thurman to accelerate the drive to liberate the Marriott Hotel, which held Americans who could become hostages. He also encouraged Thurman to quickly install the legally elected government to discredit claims that Noriega still held office or that U.S. military rule was imminent. After Noriega fled to the papal *Nunciatura,* U.S. troops played loud rock music outside the residence. When the Vatican and the diplomatic community complained to President Bush, the Chairman ordered Thurman to stop the noise. Powell then urged Thurman to have the new Panamanian government appeal to church officials in Panama and Rome for help in dislodging Noriega from the *Nunciatura*.

Noriega's surrender on January 3 ended resistance, but U.S. troops remained until the new government could take over police and security operations. Finished officially on January 31, 1990, Just Cause used 27,000 troops against an enemy force estimated at 12,000. U.S. casualties were 26 killed and 324 wounded. Some 65 PDF soldiers were killed.

If proportionally lower friendly casualties mark operational success, Just Cause was more successful than Urgent Fury. It showed substantial improvement in joint planning and execution. Part of that stemmed from the Goldwater-Nichols Act, part from the time available and forces already in place, and part from the close working relationship of top political and military leaders before and during the operation.

U.S. soldiers with Haitian policeman, Port-au-Prince.

Fleet Imaging Command Norfolk (Charles Wharton)

Haiti

Our third military intervention in the Caribbean since 1982, Operation Uphold Democracy featured flexible planning and execution of entry and operations ashore. A diplomatic breakthrough enabled peaceful entry to Haiti. However, once ashore U.S. forces had to cooperate with the military and police they were sent to replace. The JTF commander was able to perform these tasks with periodic refinement of the rules of engagement by the Chairman and CINC. Civilian agencies lacked sufficient planning time and resources and were inexperienced with military operations. Consequently their efforts to reconstruct the government and democratize the police and military were delayed. Waiting for greater civilian participation, U.S. forces assisted in civil affairs. They filled advisory roles in ministries, coordinated delivery of relief supplies, and assisted in civil administration in rural areas where local authority had collapsed.

Uphold Democracy took place principally in 1994–95. An island country, Haiti fell within the operational area of U.S. Atlantic Command. This was not the same command that had presided over Urgent Fury. General Powell had persuaded Secretary of Defense Les Aspin to transform the

Soldiers from 10th Mountain Division in Haiti.

Fleet Imaging Command Norfolk (James Lotz)

2d Marine Division (M.T. Huff)

General Shelton arriving in Haiti during Uphold Democracy.

"blue-water" Atlantic Command into one where service components would, in Powell's words, "operate jointly as a way of life and not just for occasional exercises."[6]

Aspin combined Army and combat air forces based in the continental United States with the Atlantic Fleet and its marines under Admiral Paul David Miller and directed him to focus on joint training and deployment. Enlarged and given a new mission, the Atlantic Command became ACOM, commanded by CINCLANT. Events in Haiti would quickly test its operational competence.

The overthrow of democratically-elected Jean-Bertrand Aristide on September 30, 1991 led to brutal repression, economic chaos, and a flow of Haitian refugees into the United States. During the next two years diplomats attempted to negotiate Aristide's return. On October 11, 1993 Haitian thugs blocked the docking of *USS Harlan County*, carrying a military assistance group to help democratize and professionalize the Haitian armed forces. Three days later, gunmen murdered the pro-Aristide minister of justice. Both acts signaled the junta's determination to scuttle U.S. diplomatic efforts. Undeterred, President Bill Clinton charged his national security planners to develop new options, which would come to include military intervention and peacekeeping operations.

General John Shalikashvili, USA, replaced Powell as Chairman on October 25, 1993. Having observed Urgent Fury ten years earlier, the new Chairman knew its planners had only a few days to cobble together forces for a ground campaign that lacked tactical coordination, mutual fire support, and interoperable communications. He did not want those mistakes repeated. During the first half of 1994 he closely reviewed ACOM contingency planning for joint operations in Haiti.

In preparing operational plans, the ACOM deputy commander in chief, now Lieutenant General Hartzog, drew heavily on his background

as a planner for Operation Just Cause. He also relied on the experience of the ACOM J–5, Major General Michael Byron, USMC, and Byron's predecessor, Lieutenant General John Sheehan, USMC, now serving as the Joint Staff director of operations (J–3) and the Chairman's resident expert on Haiti.

Hartzog saw parallels between Panama and Haiti. Both were dictatorships maintained by corrupt and brutal military forces. Both offered great potential for civil unrest and violence. Both were close enough to the United States for rapid deployment of large joint task forces. He directed planners at ACOM and tactical planners at XVIII Airborne Corps and the 10th Mountain Division to avoid surgical solutions and silver bullets. They were to rely on overwhelming force applied simultaneously against multiple objectives—the *coup de main* used in Panama.

with airborne troops flying toward Haiti, the Chairman directed CINCLANT to switch from an invasion to semi-peaceful entry

Published May 20, 1994, ACOM operational plan 2370–95 called for forced entry by the 82d Airborne Division, peaceful follow-on by the 10th Mountain Division, and eventual transition to a U.N. operation—all under JTF 180 led by Lieutenant General Hugh Shelton, USA, XVIII Airborne Corps. As in Just Cause the Army would be the lead force. However, 10th Mountain Division and the Joint Special Operations Task Force would deploy on the carriers *USS Eisenhower* and *USS America*.

During the next several weeks a plan was developed for peaceful entry, ACOM operation order 2380–95. After approving it in August, General Shalikashvili insisted that preparations be carried forward for both 2370 and 2380. While he anticipated a forced entry, he recognized the possibility of a diplomatic breakthrough or collapse of the junta. Events would vindicate his flexibility. Uneasy with two sharply different entry phases, Hartzog and Byron produced a hybrid "2380+" which planned for entry with a small vanguard force from the 82d Airborne to secure key airfields and seaports for landings by JTF 190.

Satisfied with the operational planning, the Chairman turned to political aspects. He and his director for strategic plans and policy (J–5), Lieutenant General Wesley Clark, USA, worked with the U.S. interagency community, President Aristide, and the United Nations on measures to build the political and economic structures needed to ensure long-term progress and stability in Haiti. Economic and political headway would end the refugee crisis and encourage cooperation with U.S. forces.

On September 11, 1994 ACOM conducted an interagency dress rehearsal of the civil-military parts of Uphold Democracy. During the drill it became evident that some civilian agencies lacked the experience, manpower, and funding to participate vigorously during the first weeks. The Chairman directed Clark to work with the United Nations, Aristide, and U.S. civil agencies until they could assume full responsibility for rebuilding the government and economy. However, D-day would arrive before broad agreements reached on the national level could become specific steps in operational and tactical plans.[7]

Nearly a week later President Clinton sent former President Jimmy Carter, Senator Sam Nunn, and retired General Colin Powell to Port-au-Prince to negotiate for the peaceful arrival of the task force. At the last moment the leader of the junta, Lieutenant General Raoul Cedras, assured the U.S. delegation that the *Forces Armée d'Haiti* (FAd'H) would cooperate in a peaceful transition to Aristide's rule. Shalikashvili's insistence on continued planning for peaceful entry would now bear fruit.

With airborne troops flying toward Haiti, the Chairman directed CINCLANT to switch from an invasion to semi-peaceful entry, ACOM 2380+. Planners at ACOM and JTF 180 changed the force list and arrival sequence. On September 19 JTF 180—XVIII Corps headquarters, a 10th Mountain Division brigade, a special Marine air-ground task force, and the Joint Special Operations Task Force—landed without incident. Troops of the 10th Mountain Division and the Marines were stationed in urban centers with special operations forces in the countryside. The number of troops participating in Uphold Democracy would peak at over 20,000.

Working with FAd'H proved problematical. The Chairman instructed the joint task force to both help FAd'H prevent violence against the junta and stop it from attacking followers of Aristide. Shalikashvili also insisted that Shelton's troops not perform routine police work. With the aid of U.S. civil agencies, Shelton was to recruit a new police force from FAd'H after screening out criminals and human rights abusers. When finding members with clean records proved almost impossible, ACOM and JTF 180 developed a plan for using international police monitors to supervise existing police until a new national police force could be trained. As it became evident that not all FAd'H members would retain their jobs or freedom under the new administration, some attacked Aristide's followers and U.S. special operations troops. To send a clear message that neither violence nor a return to the status quo would be tolerated, Rangers suppressed all known loyalist strongholds.

DOD

Marine road block, Just Cause.

Despite attempts to replace U.S. security and stability operations with civil-military and economic measures, neither the interagency community, the U.N. Secretary General, nor President Aristide could be rushed. Civilian agencies and the United Nations continued to lag in providing humanitarian and nation building assistance. Aristide delayed signing a status of forces agreement pending resolution of differences with CINCLANT on three side letter issues: Aristide's refusal to accept U.S.-trained security guards for himself, his cabinet, and the parliament; his reluctance to develop separate military and police forces; and U.S. screening of FAd'H members for service with the interim public security force. The Chairman wanted Aristide to establish a small army under a separate ministry to check the power of the police. However, the Department of State and Aristide successfully opposed it, viewing the army as a seedbed for juntas.

Aristide returned to Haiti on October 15, 1994. Ten days later, General Shelton turned over the operation to JTF 190, the 10th Mountain Division commanded by Major General David Meade, USA. During the next three months JTF 190 extended its operations to assisting civilian organizations in building a new police force and improving the infrastructure. When the U.N. Security Council certified in late January 1995 that Haiti was safe for transition on March 31, JTF 190 progressively relinquished such civil-military activities to civilian agencies.

Operational successes in Panama and Haiti rewarded efforts by Congress and the Bush and Clinton administrations to avoid the mistakes in Grenada. The determination of two Presidents and the enhanced authority of the Chairman and unified commanders under the Goldwater-Nichols Act combined to provide specific, attainable objectives and responsive, effective command and control. Commanders benefitted from maximum autonomy on the tactical and operational levels. However, when necessary, both Powell and Shalikashvili intervened to ensure the political success of these operations.

Defense reform and strong leadership have gone far in solving the strictly military problems that marred earlier joint operations. Yet neither a streamlined chain of command nor strong military leadership can compensate for the inadequacy of non-DOD agencies' resources for and inexperience with post-Cold War contingency operations. If that situation persists, the CINCs and their joint warfighters will repeatedly be asked to provide DOD resources to accomplish the political-military activities traditionally performed by domestic and international civilian organizations. **JFQ**

NOTES

[1] David C. Jones, "Past Organizational Problems," *Joint Force Quarterly*, no. 13 (Autumn 1996), p. 25.

[2] Parts of these accounts are based on interviews with DOD officials. The Grenada section draws heavily on Ronald H. Cole, *Operation Urgent Fury: The Planning and Execution of Joint Operations in Grenada* (Washington: Office of the Chairman of the Joint Chiefs of Staff, Joint History Office, 1997).

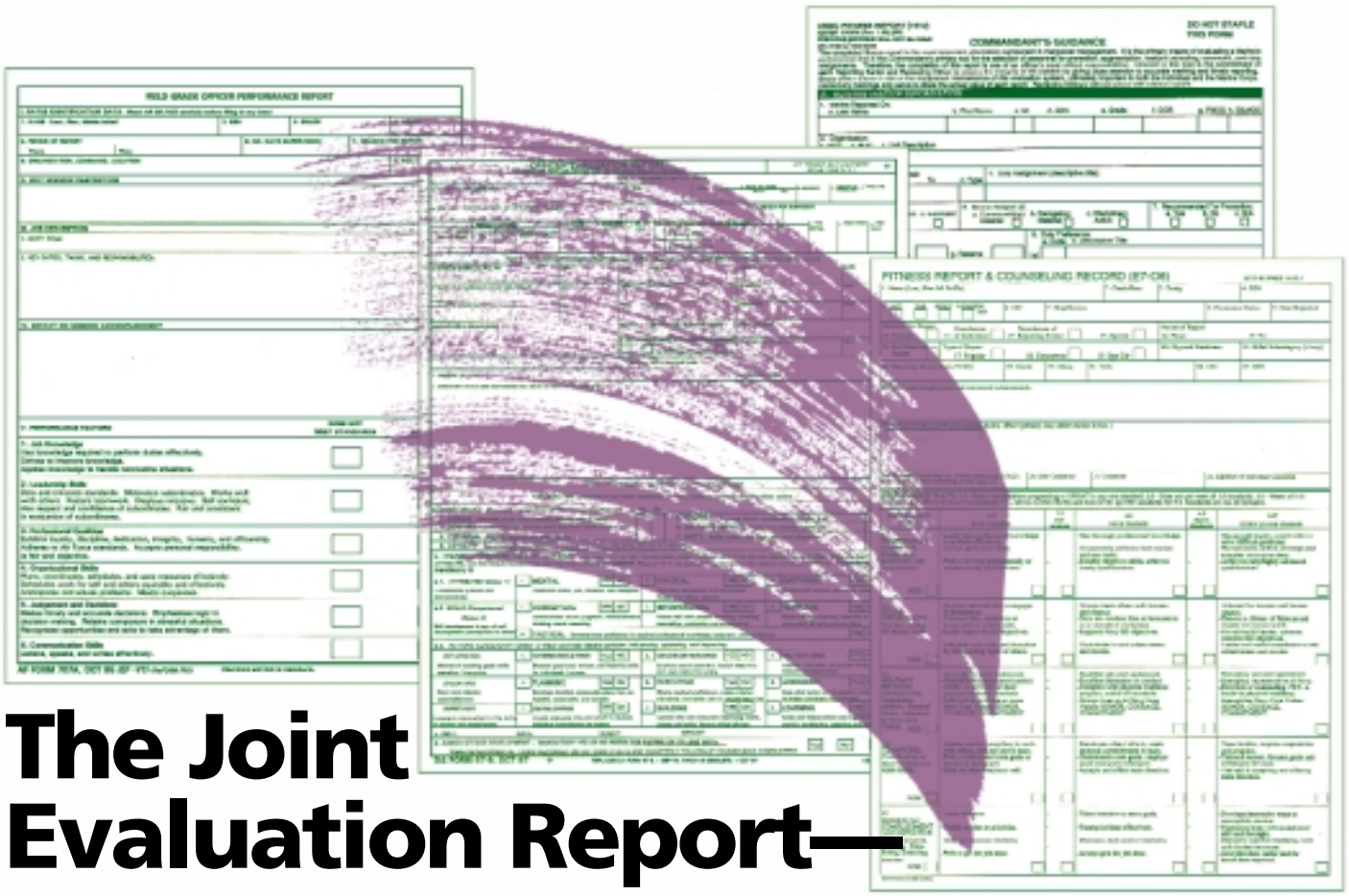
[3] Cole, *Operation Urgent Fury,* p. 1.

[4] Ronald H. Cole, *Operation Just Cause: The Planning and Execution of Joint Operations in Panama* (Washington: Office of the Chairman of the Joint Chiefs of Staff, Joint History Office, 1995), pp. 1–2, 7–10. Much of this section is taken from this book as well as testimonies provided by and interviews with DOD officials.

[5] Cole, *Just Cause*, pp. 12–14, 17–23, 76 (footnote 19); Thomas Donnelly et al., *Operation Just Cause: The Storming of Panama* (New York: Lexington Books, 1991), pp. 44–51.

[6] Ronald H. Cole et al., *The History of the Unified Command Plan, 1946–1993* (Washington: Office of the Chairman of the Joint Chiefs of Staff, Joint History Office, 1997), pp. 114–15.

[7] Adam B. Siegel, *The Intervasion of Haiti* (Alexandria, Va.: Center for Naval Analyses, August 1996), pp. 35–36.



The Joint Evaluation Report—

Career Enhancer or Kiss of Death

By VINCENT M. DREYER, BRUCE C. EMIG, *and* JAMES T. SANNY, SR.

The Armed Forces have experienced painful adjustments in their journey toward jointness. One area of continuing concern is the types of fitness reports, performance ratings, and evaluation reports used by the services. In joint duty assignments, the immediate supervisor responsible for drafting such reports, according to Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, is likely to be an officer from a service other than the ratee's. Since each service has its own system of evaluation, many supervisors lack experience in properly rating subordinates from other services. A standardized training program should be created to ensure that every rater can produce quality evaluations.

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Assessing the Problem

Officials who rate personnel from other services often have a tough time keeping current on the differences among evaluation systems. It is hard enough to keep up with changes in one's own service. A manifestation of this difficulty is the fact that many joint organizations include a senior member of the ratee's own service in the evaluation chain to make the system work. But to

transcend common sense and prove that conclusion is a greater problem. There are no studies on this subject and little evidence to show that much critical thought has been devoted to it. Is this problem real? How does the rater's lack of knowledge affect the ratee's level of involvement in preparing his own evaluation report? What would the rater and ratee do to improve the system?

A random survey was conducted of 129 faculty members and students involved in phase II of the program for joint education (PJE) at the Armed Forces Staff College. The sample group ranged in rank from major/lieutenant commander (O4) to brigadier general/rear admiral (O7) and consisted of officers from all services. Respondents had various levels of joint experience, with an average tour of twenty months. While the respondents who lacked practical joint experience could not be used to substantiate rater knowledge, their input highlighted views on joint duty (see survey data in the overview below).

Evaluating aerial refueling, Rodeo '98.

1st Combat Camera Squadron (Jerry Mossman)

The survey was admittedly limited in several respects. First, because of the lack of a sufficient population, the sample did not contain enlisted personnel. Future studies should include this level. Second, the sample did not include officers assigned to combined units under supervision of allied officers whose experience might be similar to that of their counterparts serving in joint billets. Again, the results were generalized to include combined duty. Finally, the survey results may be optimistic in the satisfaction they indicate in the status quo because all respondents were selectees for phase II of PJE. One can imagine less satisfaction among nonselectees, especially if they attribute their status to weak performance reports. These limitations aside, the survey did provide insight into ratings in the joint environment.

Survey Findings

Raters do not feel thoroughly knowledgeable of other service rating systems. Of the 129 respondents 36 had some experience in rating joint personnel (on average of 23.6 months). Asked to assess their degree of understanding of the evaluation systems of other services, only 36 percent felt positive (see

Overview of Survey Data

Demographics. The survey was administered at the Armed Forces Staff College, a component of the National Defense University located in Norfolk, Virginia, that prepares mid and senior-level officers for joint duty assignments. The total available population was 321 faculty members and students. The survey captured the responses of 129 randomly selected officers (40 percent of the total population), a sample that closely represented the actual number of officers (end strength) in each service.

	Army	Navy	Marine Corps	Air Force
Number of respondents	45	32	6	46
Percent of total	34.9	24.8	4.7	35.6
Officer end strength by service	79,580	56,964	17,885	75,343
Percent of total	34.6	24.8	7.8	32.8
Respondents by grade (rank):				
O4 (major/lieutenant commander)	32	19	5	36
O5 (lieutenant colonel/commander)	12	13	1	8
O6 (colonel/captain)	1	—	—	1
O7 (brigadier general/rear admiral)	—	—	—	1

Analysis. Data was analyzed using statistics that tabulated the frequency at which each quantitative variable (score) occurred. The treatment selected divided the ordered data into groups to ensure that a certain percentage above and another was below. In addition, data was sorted by attributes (length of joint duty assignment, grade, and service). Subsequent frequencies were computed after sorting into the different groups. JFQ

figure 1 below). By service, Army officers felt the most informed, though not strongly. The Marine Corps ranked second, while the Navy and Air Force felt slightly less knowledgeable.

This lack of expertise is not surprising given the amount of training raters received on other service rating systems. Asked if they had received some standard instruction such as unit training, 78 percent said they had little or none (see figure 2 below). Report of this shortfall was essentially balanced across the services.

The ratee feels that supervisors lack sufficient knowledge of other service rating systems. From the above discussion, it would make sense that the ratee might lack confidence in his rater's knowledge of different evaluation systems. When asked about confidence in the understanding of raters in their own rating systems, only 30 percent expressed some level of faith, while 55 percent felt raters lacked sufficient understanding and 15 percent were neutral. Respondents with no joint experience expressed only a 48 percent negative response (and the positive response was the same in both groups, 30 percent). Perceptions of rater knowledge (by those with no joint experience) thus appear very close but slightly more optimistic than actual rater knowledge. In other words, the confidence of the average officer in his rater's knowledge of the evaluation system decreases after starting work at a joint duty assignment (figure 3 on page 68).

respondents have mixed feelings on the effect of joint duty assignments on promotion potential

Respondents have mixed feelings on the effect of joint duty assignments on promotion potential. When respondents with no joint experience assessed the impact they anticipated a joint duty assignment to have on future promotions, 73 percent thought it would be positive, 26 percent neutral, and only 3 percent negative. By comparison, in the group with joint experience only 50 percent felt their joint duty assignment would positively influence promotions, 20 percent felt it would have a negative impact, and 30 percent thought it would not affect promotion (figure 4 on page 68). Thus the average officer seems less optimistic about promotion after joint duty. Results were fairly balanced across service lines, with the Navy responding slightly more positively and the Marines somewhat less.

The ratee serving in a joint duty assignment is more involved in preparing his evaluation. When indicating their involvement in preparing their own evaluations in non-joint assignments, 68 percent reported that they wrote at least some of it. Although this appears higher than desired, the number increases in joint duty assignments where 78 percent claim some participation (see figure 5 on page 69). This is probably a reflection of findings 1 and 2 above (such as the lack of rater knowledge and a ratee's lack of confidence in his rater's understanding of other service evaluation systems). Naval officers reported the highest level of involvement in non-joint as well as joint duty assignments, while marines reported the largest jump in involvement between them (see figure 6 on page 69).

Figure 1. Self-Assessment of Understanding of Evaluation Systems of Other Services

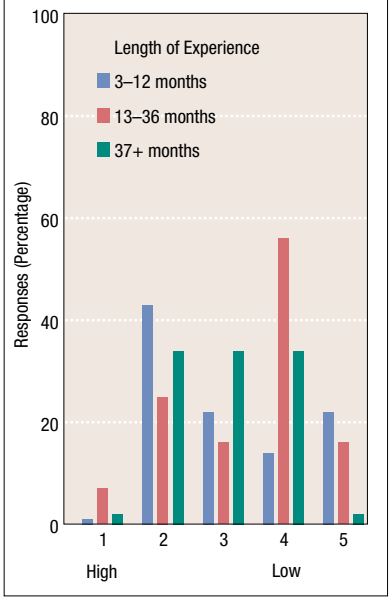
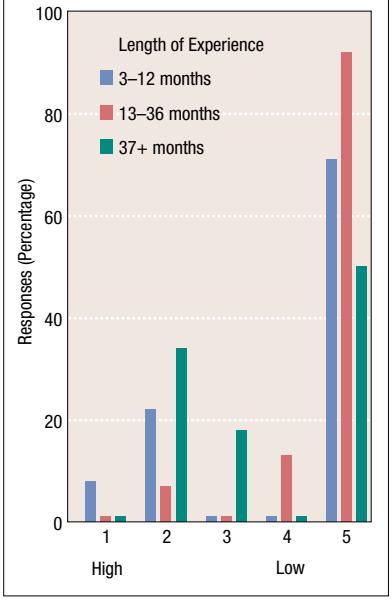


Figure 2. Amount of Formal Training Reported as a Joint Rater



Analyzing the Data

The lack of confidence in rater knowledge (and the raters' admitted lack of expertise) can cause the perception that joint duty is an unwise career move. While the Goldwater-Nichols Act addressed this problem by mandating that promotion rates for joint qualified officers must be equal to or exceed those for non-joint qualified officers, this survey indicates that joint duty assignments may still have a stigma, caused in part by the current method of preparing evaluations. This could lead quality people to avoid such duty despite legislative safeguards.

The increased involvement of joint personnel in the preparation of their own evaluations is a problem that warrants our attention. Because of the level of rater knowledge, a member is often compelled to write at least some of his evaluation report to produce a quality product that complies with service guidelines. This is at best uncomfortable, forcing a servicemember to boast about his

accomplishments and rate himself in comparison with peers. We condemn careerism and promote service to the Nation. How then can we permit a servicemember to either write his own report or let a rater hinder his career with an evaluation that might not allow him to compete?

As previously noted, the main issue emerging from the survey is lack of rater knowledge of evaluation systems in other services. Decisionmakers can consider two approaches for modifying the current system. The process could be changed by creating a DOD-wide or a joint duty-specific evaluation report. Or a standardized program of training aimed at improving rater knowledge could be implemented. The advantages and disadvantages of these approaches, including feedback from survey results, are discussed below.

the DOD-wide officer evaluation would add a fifth system to a burgeoning network of forms and regulations

Approach I: Change the System

DOD-wide evaluation system. The radical solution would be creating a common evaluation system for every service with Army, Navy, Marine Corps, and Air Force using the same form and governing regulation. A rater's lack of knowledge concerning another service's system would no longer be an issue since all officers would be evaluated under common criteria. The rater could not only write a meaningful evaluation but save considerable time normally spent finding and studying unfamiliar manuals and regulations to grasp another service's system. This solution would also provide a common point of reference for promotion board members, especially at senior levels.

But there are disadvantages. First, it would be difficult to develop a standard system that allowed detailed documentation of an officer's job performance, particularly during service-specific assignments. Creating a common DOD system would be extremely time consuming at best and impossible at worst. But even if an equitable, sensible methodology could be developed, acceptance by every service is doubtful, given the natural proclivity in maintaining institutional identities complete with a unique language and culture. The survey confirmed this deduction. Overall, 53 percent of the respondents rejected a common evaluation while 26 percent were neutral. Marine Corps officers were the most adamant in their opposition (83 percent), followed by Army officers (56 percent), Navy officers (50 percent), and Air Force officers (48 percent).

Joint duty assignment evaluation. Another solution would having an evaluation system for joint duty assignments. Such a system could ensure that officers, regardless of service, are rated under standard criteria and procedures. Like a common evaluation, it would simplify the process, giving raters only one (albeit an initially unfamiliar) rating tool. The services might even be willing to allow a temporary invasion of their prerogatives, provided officers reverted to their parent system after joint duty assignments. Like the DOD-wide officer evaluation, the joint report would provide common reference points for promotion boards (but only for joint duty assignments).

This option also has disadvantages. First, rather than streamlining the current procedures, it would add a notional fifth system to a burgeoning network of forms and regulations. It would also require training all officers assigned to joint billets as well as anyone who is selected to serve on a promotion board. In addition, if promotion boards viewed this evaluation method as inferior for some reason, a joint officer might not compete as well as his service counterparts. However, the most significant drawback, as discussed earlier, is that the services would likely be unwilling to reduce their institutional control over the evaluation and promotion process. Overall, 56 percent of those surveyed disapproved of this idea (16 percent were neutral). The Marines again led the way (67 percent), followed by the Navy (66 percent), Army (64 percent), and Air Force (39 percent).

Figure 3. Ratee's Confidence in Rater's Understanding of Service Evaluation Systems

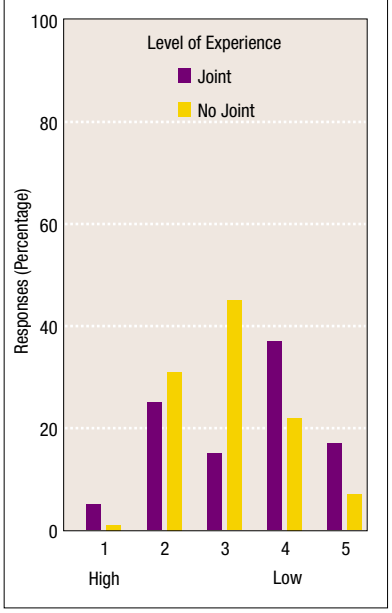
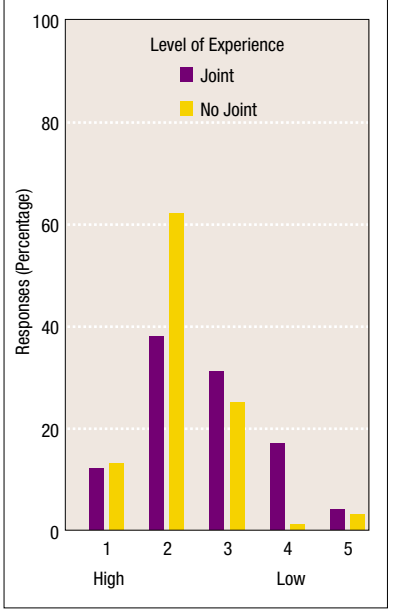


Figure 4. Anticipated Impact of Joint Evaluations on Future Promotion Potential



Plotting coordinates, Foal Eagle '98.

1st Combat Camera Squadron (Jim Varhegyi)

Approach II: Standardize Training

Rather than changing the current method, another approach might be a formal standardized training program to ensure that raters know how to write meaningful and career enhancing (if warranted) reports on subordinates from other services. Over 96 percent of survey participants felt that some type of standardized training should be required for rating officers in joint duty.

Although the advantages of standardized training are obvious, implementation is less clear. Options could be executed unilaterally or in combination: publishing a common DOD manual, introducing a block of instruction in either phase I or II of PJE, and presenting standardized training on assuming a joint duty assignment.

DOD manual/handbook. A single reference for preparing evaluations reports with a section dedicated to each service would greatly enhance the ability of a rater. The guide would not require formal training as long as the rater studied it carefully. Essential elements of each section would be a sample evaluation with a definition of terms, step-by-step instructions on completing the form, and a brief explanation of each service's promotion process (including the role and weight of the report in selection). Although raters would still have to know three other evaluation systems, they would not waste time trying to interpret regulations from other services. Periodic review and updates would keep the manual current and an Internet web page would enable timely notification of changes to service procedures. In the survey, 57 percent of the respondents thought a standard DOD manual would increase rater competence.

Figure 5. Ratee's Level of Involvement in Preparing Own Evaluation by Experience

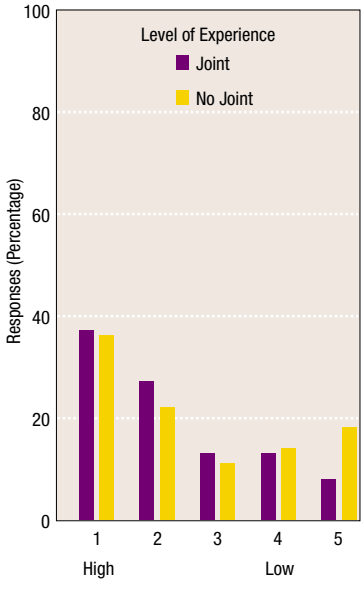
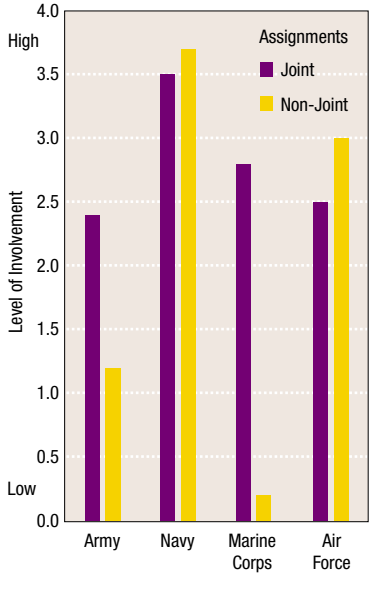


Figure 6. Ratee's Level of Involvement in Preparing Own Evaluation by Service



Fleet Imaging command, Atlantic (Leland B. Comer)

Gathering information, Global Guardian '99.

Standardized training in phase I of PJE. A standardized block of instruction during phase I at the intermediate level (staff college) would provide a more formal method of training raters. Officers normally get their first exposure to joint doctrine and operations during this phase; thus an introduction to the rating systems of other services would be appropriate. While most graduates of intermediate staff schools do not go straight into a joint duty assignment, an extensive training program would probably be a waste of time and assets. The survey respondents concurred, with only 16 percent thinking that training during this phase was a good idea. The main goal at this point in one's career might be to provide an overview of different rating systems and describe the standard training program.

Standardized training in phase II of PJE. Standardized instruction at the Armed Forces Staff College would be logical and cost effective. Since graduates are already in or heading to joint duty assignments, the knowledge they gain would have instant value. One approach to formal standardized training might be dedicating six hours (two per each other service) wherein the course readings provide the basis for practical exercises. The standard text could be the manual mentioned above. Introducing this instruction would be virtually free since it could be spread over several days without extending the length of the course. Some 43 percent of participants thought formal training should be offered during phase II. The major downside is that it would not train all raters since only a portion attend PJE. A supplemental program would have to handle this shortfall.

Standardized training at joint unit level. A fourth avenue for educating would be presenting a standardized program at the joint unit level. This would benefit those who have not yet attended phase II of PJE and those unable to attend. It would require designating and training an evaluation trainer, probably as additional duty, who would present standardized instruction within a given time after new officers report for duty. Again, a DOD manual could provide the foundation. A training briefing would be another vehicle to ensure standardization in joint headquarters (and could be incorporated in phase II of PJE). While instruction has a price (namely, in loss of training time), the benefits outweigh the sacrifice. The result would be a generation of raters who are prepared to give subordinates quality evaluations. Some 67 percent of those surveyed favored this approach.

It is apparent that many officers serving in joint duty assignments lack the expertise to rate subordinates from other services. Standardized rater training is needed to improve evaluations in joint organizations. Although there are distinct advantages in developing a joint evaluation system, survey respondents strongly disapproved of such an approach. With more service interoperability, however, the idea may gain acceptance.

Meanwhile a standard training program presented during phase II of PJE or at the joint unit level would acquaint raters with variations in service evaluation systems. Better understanding of these subtleties is essential to writing quality reports. In addition, a common DOD manual on evaluations would provide the basis for uniformity throughout the Armed Forces. As joint raters become more proficient, many apprehensions and misgivings on the part of ratees will be alleviated. Despite such advances, one should not view standardized training as a panacea. A more extensive study is required. Until then, the senior servicemembers in each joint organization must continue to review evaluations written by raters from other services. **JFQ**

B–26s returning to base.

Courtesy U.S. Air Force History Office

Kasserine Pass and the Proper Application of Airpower

By SHAWN P. RIFE

In November 1942 the Allies began Operation Torch, a massive invasion of French Morocco and Algeria with over 107,000 troops—three-fourths American—designed to throw Axis forces out of North Africa. Many factors including faulty decisions, confused command relationships, supply problems, and inexperienced troops thwarted hopes for a rapid victory. Forces under Field Marshal Erwin Rommel concentrated in Tunisia and were reinforced. Allied difficulties culminated in near disaster at Kasserine Pass in February 1943. In the process, the U.S. Army learned a major lesson on the appropriate relationship between air and ground forces—a lesson that it later put to good use. Kasserine Pass is the only important battle fought by the Armed Forces—either in World War II or since that time—without enjoying air superiority.

During the winter of 1942–43, the air organization in North Africa paralleled the division of ground forces into American, British, and French contingents. Major General Carl Spaatz, nominal commander of Allied Air Force, ordered Eastern Air Command under Air Marshal William Welsh to support British 1st Army while Twelfth Air Force under Brigadier General Jimmy Doolittle, hero of the April 1942 raid on Tokyo, was directed to support all U.S. land forces. In particular, Twelfth Air Force's XII Air Support Command (ASC) was charged with cooperating with the American land forces, organized and consolidated under II Corps.

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U.S. Air Force

Loading fighter bombers, Tripolitania.

XII ASC possessed a large proportion of available American fighters and light and medium bombers but suffered a number of operational handicaps. The rainy season turned many airfields to mud. Logistics shortfalls and inexperience among ground crew reduced sortie rates. Lack of radar coverage at the front forced XII ASC to rely upon fighter sweeps for counterair operations, which the Germans usually managed to avoid.

Aerial Umbrellas

One of the most crippling obstacles for XII ASC was poor air support doctrine as embodied in Field Manual 31-35 of April 9, 1942, *Aviation in Support of Ground Forces*. Although the Army Air Force had spearheaded development of this manual, intending that it address only the conduct of close air support, in trying to reconcile different viewpoints it contained inconsistencies that opened the door in doctrinal terms to the subordination of the air force to ground force needs.

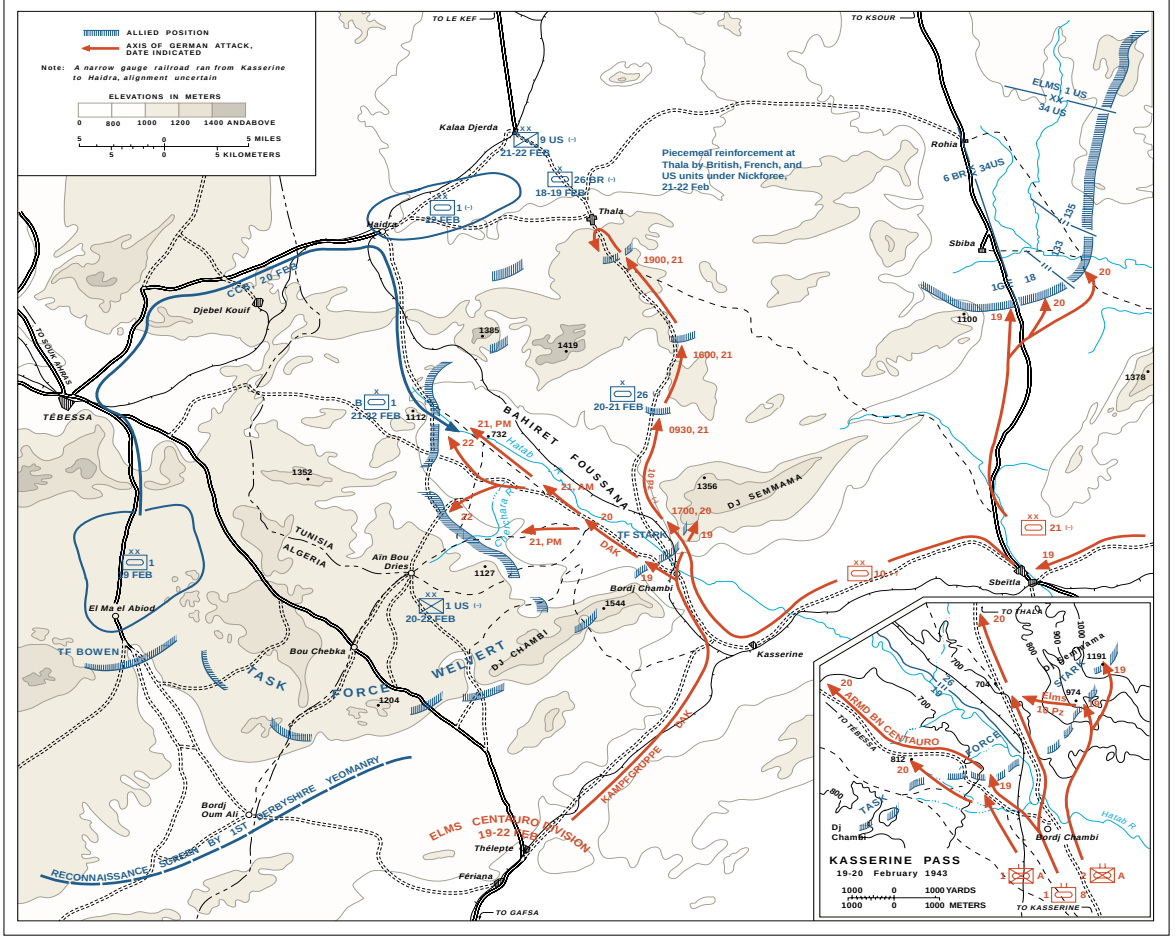
> ***Every soldier generally thinks only as far as the radius of action of his branch of the service and only as quickly as he can move with his weapons.***
>
> **—General Karl Koller**

Contrary to popular belief FM 31-35 did not prescribe that air units should be either assigned or attached to ground units. This omission disappointed ground force officers who, ignoring the disastrous French experience in 1940 when the *Armée de l'Air* was fragmented into individual units under different ground commanders, objected to the centralized control of air assets. However, the manual did state that "the most important target at a particular time will usually be that target which constitutes the most serious threat to the operations of the supported ground force. The final decision as to priority of targets rests with the commander of the supported unit."[1] This excerpt would be the centerpiece of the doctrinal disagreement between air and ground officers. Despite any agreement on what FM 31-35 actually meant for command and control of airpower, General Dwight Eisenhower, who exercised nominal control over the entire Allied force, wrote in January that "[we] have a published doctrine that has not been proved faulty."[2] A headquarters memo of October 1942, stating that aircraft should not be "frittered away" on unimportant targets but instead "reserved for concentration in overwhelming attack upon important objectives," failed to resolve the problem.[3]

The effects of this doctrinal dispute were exacerbated by the lack of an effective air-ground support team. Inexperience and inadequate training on all levels, the fluid situation on the ground, and frequent command changes all contributed to the problem. The Americans neglected to glean any meaningful lessons from the British experience in the Western Desert. Neither of the architects of the successful British air operations present—Air Vice Marshal Arthur Coningham nor Air Chief Marshal Arthur Tedder—were consulted during the planning for Operation Torch. The confusion engendered by a doctrine that blurred lines of authority and encouraged conflict in setting priorities resulted in such incidents as aircraft sitting idle during a fierce German attack on French lines in late January. On one occasion, Major General Lloyd Fredendall, commander of the U.S. II Corps, ordered XII ASC to refuse an urgent French request for air reconnaissance support on the grounds that II Corps had no responsibilities in the affected area.

On January 31, German *Stukas* struck an American truck convoy near Maknassey, Tunisia, and inflicted numerous casualties. Although the troops were inexperienced and had little antiaircraft support, this incident convinced ground commanders of the need for aerial "umbrellas." Lieutenant General Kenneth Anderson, commander of British 1st Army (who was unfamiliar with air-ground experiences in British 8th Army in the Western Desert), wanted available aircraft employed as flying artillery and, according to his chief of staff, was uninterested "in the bombing of enemy airdromes." Similarly, Fredendall "wanted his men to see some bombs dropped on the position immediately in front of them and, if possible,

Battles at Kasserine Pass and Sbiba Gap (February 19–22, 1943)



Source: George F. Howe, *The Mediterranean Theater of Operations, Northwest Africa: Seizing the Initiative in the West* (Washington: Office of the Chief of Military History, 1957), map 9.

some [enemy] dive bombers brought down in sight of his troops." However, U.S. medium bomber and P–40 groups had suffered heavy losses to German fighters and ground fire in air support missions, and the replacement rate for both pilots and aircraft could not keep pace. Accordingly, an exasperated General Spaatz argued that the air forces should be allowed to hit airfields, tank parks, and unarmored convoys—targets with greater long-term consequence. Spaatz told Fredendall that "if he maintained a constant 'umbrella' over one small section of the front with only shallow penetrations by bombers and fighters . . . his available force would be dissipated without any lasting effect."[4] Fredendall—who had built an elaborate bomb-proof headquarters far from the front—conceded that infantry, armor, and artillery were not the "soft points" of the Army, but he refused to agree to any ground support arrangement proposed by airmen.

The results of this impasse should have been predictable. With no offensive radar coverage, XII ASC was overburdened trying to both provide umbrellas and escort attack aircraft attempting to conduct missions behind enemy lines. On February 2, friendly forces suffered serious losses in the effort to protect a wide front. A cover mission consisting of six P–40s and four P–39s encountered twenty to thirty *Stukas* and eight to ten Bf 109s. Five P–40s were lost while only one *Stuka* was shot down. The Germans, reinforced with aircraft transferred in the retreat from Libya, asserted air superiority over Tunisia—not by greater numbers but because of exceptional aircraft (the Americans still could not match a well-handled Bf 109) and U.S. Army support doctrine that permitted the *Luftwaffe* to operate virtually with impunity.

Back to the Dorsal

Taking advantage of the situation, Rommel launched an offensive designed to instill in the

P-40 after German night raid, Algeria.

U.S. Air Force

Courtesy U.S. Air Force History Office

Ju 52 escorted by Ju 87.

Americans "an inferiority complex of no mean order." The Allied front in Tunisia had gathered along a mountain range known as the Eastern Dorsal, which ran north to south parallel to the eastern shore of Tunisia. II Corps was spread out in defense of passes on the southern end of the range. Rommel's plan was to break through the American-defended passes, drive across the wide plain to the west, force through the passes of another mountain range known as the Western Dorsal, and then overrun Allied airfields and supply depots northward to the Algerian coast.

Between February 14 and 16, 1943, the Germans destroyed two battalions each of American armor, artillery, and infantry and forced II Corps off the Eastern Dorsal. XII ASC, compelled to hastily evacuate forward airfields and hampered by bad weather, was unable to intervene effectively and II Corps, harassed by the *Luftwaffe*, retreated in disorder to the Western Dorsal. Here attention turned to Kasserine Pass, a corridor to the vital Algerian crossroads town of Tebessa. Fortunately for the Allies, the Germans were plagued by command and control problems of their own, which delayed the assault on the pass by two days. The exhausted Americans used the time to regroup and receive reinforcements.

> ***Air power is indivisible. If you split it up into compartments, you merely pull it to pieces and destroy its greatest asset—its flexibility.***
>
> —Field Marshal Bernard Montgomery

In the midst of the Kasserine crisis, the Allies completed a number of command changes previously proposed at the January 1943 Casablanca conference. The most important was the establishment (under Sir Coningham) of the Northwest African Tactical Air Force (NATAF), a sub-element of the new Northwest African Air Force under the command of Spaatz (who would thenceforth participate in Allied conferences as an equal to his ground and naval counterparts). Consistent with British doctrine, one of Coningham's first actions was suspension of air umbrella missions unless specifically authorized by NATAF. He pointed out that there were never enough aircraft to meet demand and directed a halt to tank-busting. Instead, all future missions would center on airfields, infantry concentrations, and soft-skinned vehicles. Guidance was issued that:

> [Maximum air support for land operations] *can only be achieved by fighting for and obtaining a high measure of air supremacy in the theater of operations. As a result of success in this air fighting, our land forces will be enabled to operate virtually unhindered by enemy air attack and our air forces will be given increased freedom to assist in the actual battle area and in attacks against objectives in the rear. . . . The enemy must be attacked wherever he can be found, and destroyed . . . the inculcation of the offensive spirit is of paramount importance.*[5]

Eisenhower eventually embraced the new philosophy, in part because he lost confidence in Fredendall (replaced by George Patton on March 6). Nevertheless, it would take time for these new arrangements to affect the battlefield. On February 20, the Germans broke through

U.S. Air Force

301st Bomb Group Headquarters, Algeria.

Courtesy U.S. Air Force History Office

Coningham with war correspondents.

Kasserine Pass after two days of fighting, again forcing the Americans back in disorder. Seemingly on the verge of victory, Rommel suddenly became cautious. Impressed by the abundance of American equipment and supplies and the speed with which reinforcements had been rushed into the Kasserine area, he withdrew his forces to the Eastern Dorsal to prepare for an expected Allied counteroffensive. Freed from constraints on the ground, British and U.S. aircraft punished the retreating enemy. Although the effect of these missions was not apparent to the Allied commanders at the time, Rommel would later write that his forces "were subjected to hammer-blow air attacks by the U.S. air force in the Feriana-Kasserine area, of weight and concentration hardly surpassed by those we had suffered at Alamein."[6] Several days later, Rommel was relieved of command (officially to take "sick leave") after unsuccessfully arguing with Hitler that North Africa should be abandoned.

The Americans did not adopt every British idea on airpower. There was disagreement as to whether XII ASC should follow the Royal Air Force practice of directing all air support requests to the headquarters level. Americans preferred using air support parties where Army Air Force liaison teams traveled with the forward ground elements and communicated directly with aircraft assigned to close air support. (In practice, as Allied aircraft grew in number, both methods proved effective.)

Nor did disagreements cease between ground and air commanders. Patton, who at first had endorsed the schemes implemented by Coningham, angrily criticized his colleague when a German air attack killed one of his aides. Eisenhower was forced to intervene, suggesting that Patton drop the matter for "the great purpose of complete Allied teamwork." Nevertheless, complaints from ground commanders over air support continued for much of the remainder of the campaign. Spaatz concluded that they originated from the inability to obtain close air support when and where needed. His visits to the forward headquarters indicated that lack of communication rather than of aircraft was the difficulty. Some problems

Ju 87B-1 *Stukas.*

Courtesy U.S. Air Force History Office

were the result of conflicting requests between British 1st Army and U.S. II Corps. Spaatz took action, including sacking the air liaison officer at II Corps. A return visit by Spaatz to the forward lines on May 4 revealed greater satisfaction with the air support.[7]

The Palm Sunday Massacre

Meanwhile, the rest of Twelfth Air Force, consisting mainly of heavy and medium bombers and escorts, had not been idle in North Africa. During the height of the Kasserine crisis, Spaatz had placed most of the bombers in XII Bomber Command at Coningham's disposal. After February 24, Twelfth Air Force resumed its campaign against German supply in North Africa in force. Air attacks on shipping and harbors, along with minelaying operations, had begun in earnest in mid-January. By the end of February Allied aircraft were forcing the *Luftwaffe* to withdraw its fighters to protect ports and convoy routes. This relinquishment of air superiority had a cascading effect: *Stuka* losses went up even as the deteriorating ground situation increased German demands for close air support. To meet these needs, enemy bombers were forced to give up attacks on enemy ports, thus easing the Allied supply situation but not achieving any significant results at the front.[8]

The sinking of Axis shipping continued, forcing the Germans to rely increasingly on aerial resupply. In the face of the growing quantitative superiority of Allied fighters, the result was disaster. On April 18, for example, four squadrons of P–40s intercepted a formation of more than a hundred Ju 52 transports escorted by mixed Axis fighters. Some 78 Axis aircraft were shot down with the loss of only seven American planes. It would be known as the "Palm Sunday Massacre."[9]

In April and early May, the *Luftwaffe* lost 177 Ju 52s supplying North Africa. Combined with the catastrophic losses at Stalingrad, the German air transport fleet was effectively destroyed. In Tunisia the Germans possessed plenty of men and guns but were soon desperately short of food, ammunition, and fuel. On April 22, the *Luftwaffe* began to withdraw from its North African bases and the Allied air forces were able to shift from attacks on airfields to ground support missions. German defenses crumbled and the campaign in North Africa ended on May 13 with the surrender of 250,000 Axis soldiers.

Lessons

There were many reasons for the American debacle at Kasserine Pass in February 1943, but perhaps the most significant in terms of lessons for the future was poor handling—largely as a result of inferior doctrine—of the combat air assets

Courtesy U.S. Air Force History Office

Spaatz and Patton meeting in Algiers.

available to the Allies prior to the battle. Most of the traditional principles of war were ignored. The treatment in FM 31-35 of airpower as flying artillery to be parceled out in support of ground formations at the point of attack squandered aircraft on costly and frequently inconsequential missions, ensured that other aircraft were underutilized in the midst of disagreements over priorities, and left many more lucrative targets untouched. The emphasis on defensive air umbrellas meant that superior German fighters could concentrate at important points and return to the sanctuary of their airfields. The enemy was able to take the initiative both in the air and on the ground until stopped by the weight of numbers, but many Allied casualties were incurred.

In July 1943, in response to the problems with FM 31-35, the Army introduced FM 100-20. The new manual asserted: "Land power and air power are co-equal and interdependent forces. . . . Control of available air power must be centralized and command must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited."[10] This doctrine would be proven in Western Europe in 1944–45.

The tenets of FM 100-20 remain integral to current Air Force doctrine. AFDD 1, *Air Force Basic Doctrine*, makes "centralized control and decentralized execution" a fundamental of airpower:

Air and space power must be controlled by an airman who maintains a broad strategic and/or theater perspective in prioritizing the use of limited air and space assets to attain the objectives of all U.S. forces in any contingency across the range of operations. . . . The lesson is clear: attempts to fragment the control and planning of air and space power will ultimately cost blood and treasure by diverting effort and impact. Centralized control allows commanders to focus on those priorities that lead to victory.

As our forces shrink because of budget reductions, the need for a single commander who can efficiently prioritize the use of precious air assets in pursuit of campaign objectives should be readily apparent. **JFQ**

NOTES

[1] Office for Air Force History, *The Army Air Forces in World War II* , volume 2 (Chicago: University of Chicago Press, 1949), p. 137.

[2] Richard G. Davis, *Carl A. Spaatz and the Air War in Europe* (Washington: Center for Air Force History, 1993), p. 174.

[3] Office for Air Force History, *Army Air Forces*, p. 137.

[4] David Syrett, "Northwest Africa, 1942–43," *Case Studies in the Achievement of Air Superiority*, edited by Benjamin Franklin Cooling (Washington: Center for Air Force History, 1994), p. 241.

[5] Office for Air Force History, *Army Air Forces*, p. 168.

[6] Davis, *Air War in Europe*, p. 183.

[7] Ibid., pp. 206–09.

[8] Williamson Murray, *Strategy for Defeat: the Luftwaffe 1933–1945* (Maxwell Air Force Base, Ala.: Air University Press, 1983), p. 162.

[9] Walter J. Boyne, *Clash of Wings* (New York: Simon and Schuster, 1994), p. 186.

[10] Office for Air Force History, *Army Air Forces*, p. 206.

The Asymmetric Threat:

Ranger during Joint Training Field Exercise 99-1.

55th Signal Company (Gerald T. James, Jr.)

Listening to the Debate

By ROBERT DAVID STEELE

Robert David Steele is chief executive officer of Open Source Solutions, Inc., and was responsible for establishing the Marine Corps Intelligence Center.

Can this Nation be defeated by asymmetric means that strike at the known Achilles heels of the Armed Forces as well as key nodes in a largely unprotected civil infrastructure? A conference held in 1998 at the U.S. Army War College concluded that it can. The annual strategy conference on "Challenging the United States Symmetrically and Asymmetrically" questioned every aspect of *Joint Vision 2010* and identified the need to abandon our present force structure but not the budget to wage two nearly simultaneous major regional conflicts and a minor contingency (2+ approach). Although not endorsed by all the conferees, a substitute strategic vision might be a 1+iii approach: a major regional

conflict, a low intensity conflict or law enforcement support scenario, a major humanitarian relief operation, and a major electronic campaign (in the offense or defense).

The most difficult issue which arose during the conference was not threat identification or even response development, but rather the more ambiguous political question of whose job is it? According to many participants the military must not allow itself to be distracted from its primary responsibility to prepare for conventional conflicts, then either deter or win them. All appeared to recognize that the U.S. Government is not trained, equipped, or organized to deal with three of the four threat classes,[1] and therefore the larger challenge may be internal to the Federal bureaucracy as a whole—developing the concepts, doctrine, and organizational means of working across cultural, legal, and fiscal boundaries.

The Bottom Line

General Paul Van Riper set the stage at the conference by relating how the past fifty years have led to decisionmaking that has forgotten how to plan, cannot adapt to change, and is unable to stimulate a serious dialogue. From *JV 2010* to dominant battlefield awareness we face a proverbial naked emperor. With reference to information operations and asymmetric warfare, Van Riper said that no one can define information superiority or explain how we achieve it. Pablum publications now substitute for strategic thinking—and wishful thinking on warfighting for realistic planning.[2]

the failed promises of aviation have not been scrutinized

Desert Storm, regarded by many as the catalyst, vindication, or culmination of a so-called military technical revolution, must be considered with caution according to Van Riper. The enemy may have suffered a tactical defeat, but on the strategic level it not only retained power but grew in influence in both the Arab and Islamic worlds. In particular, the failed promises of aviation have not been scrutinized, and too many decisionmakers believe that strategic and tactical aviation can preclude the need to place infantry at risk.

Several distinguished historians, including John Guilmartin, Robert Doughty, and Donald Mrozek, examined lessons of the past and were most helpful in provoking thoughts on the future:

- Mobility is more important than mass.
- Technology is worth little without timely and insightful intelligence and geospatial data on a useful level of resolution.
- Weapons must fit targets; we cannot afford to take out hundreds of small targets with extremely expensive high precision munitions.[3]
- Time and space are far more available to an enemy than to ourselves—and can be traded for bodies and bullets.
- An enemy objective is to make us spread ourselves too thin—yet we persist in starting every confrontation that way.

State and Non-State Threats

A number of speakers provided a comprehensive review of the non-state threat. Their most telling observations included:

- America is its own worst enemy—procuring computers open to errors and omissions, inadvertent destruction of data, insider abuse, and outside attack (the least of our problems).
- U.S. vulnerabilities to asymmetric attack are largely in the civil sector (bridges, levees, dams, power and telephone switches, and downlinks for intelligence and operations). The most vulnerable is data managed by banks and major logistics elements including fuel suppliers.
- Enemies will succeed by waging war between the seams in our legal system, not our operational capabilities.
- Time favors an enemy using any information virus.
- Future enemies will choose carefully between stand-off, indirect (anonymous), and hands-on attacks.
- The political, economic, and technological climate favors both increased terrorism and asymmetric attack. This will lead to the privatization of security, militarization of police agencies, and gendarmification of the military.
- Existing criteria for victory are unachievable (decisive triumph, limited casualties).
- Current force structure is vulnerable to superior asymmetric maneuvering in time, space, and materials (such as infrasonic waves easily penetrating armor to harm personnel).
- The Nation remains vulnerable to campaigns that manipulate the international media and domestic perceptions, especially with regard to atrocities and casualties.
- The Achilles heel in U.S. overseas deployments will be dependence on volunteer civilian contractors to maintain complex technologies beyond the abilities of uniformed personnel.
- Most actors, especially from non-Western cultures and less-developed areas, are capable of taking pleasure in doing evil; thus the human factor should not be underestimated in conflicts.

Three speakers offered insights on state-on-state conflict. One man's limited war is another man's total war; U.S. perceptions of information operations as a form of warning or limited attack are completely at variance with Russian perceptions of C^4I assaults as core attacks against the very survival of the state. And it is not enough to win in the field—one must also win strategically.

Lessons from the Gulf War include the nature of coalitions, the role of public support that can only be achieved if policies and objectives are explained and make sense, and the importance of timing in identifying and responding to challenges.

With regard to states but going beyond them, one speaker identified six functional areas of concern: anti-U.S. coalitions (Iran-Iraq or Asian economic block); new borders and contested new states (a Kurd republic challenging Turkey, Iraq, or Saudi Arabia); regime changes (North Korea, Egypt, or Saudi Arabia); conditions inhibiting the use of the military; critical dependence on allies; and criminalization of governments (Colombia or Mexico).

Summary Conclusions

The final panel of the conference began with a summary by John Williams, who noted that "getting into [enemy] heads is more important than getting into their bytes." His point was drawn from a theme heard throughout the conference: understanding a potential enemy, its circumstances, and especially its culture may be more vital than any technological edge. Indeed, technology is not an advantage in asymmetric warfare but a vulnerability; the only recourse is greater understanding of threats, and hence an ability to address their root causes in time to avoid conflict.

The United States will continue to have difficulties dealing with complexity and nonlinear conditions, particularly because costly systems are driving us in one direction while reality is often moving us in another. Moreover, there are questions about combating challenges such as domestic terrorism and ambiguous threats. The Reserve components play important roles—but we have not defined their role in pursuing asymmetric strategies.

technology will not replace boots on the ground

Williams advanced four additional areas that require further consideration:

- *Fallacy of misplaced concreteness*. We are too quick to accept our programmed systems and approved force structure as a given of value.
- *Offensive asymmetry*. We have not explored the areas where we have an advantage.
- *Nature of the planning process*. It does not deal with unanticipated radical shifts.
- *Civil-military relations*. We need to examine the role of the military officer in educating the civil sector and advocating specific strategies for dealing with threats to the Nation.

Major General Timothy Kinnan stated that we cannot afford the existing force structure but the services behave like rats in a box, eating each other in the allocation process. We need to move away from 2+. Also, technology will not replace boots on the ground; its major contribution may be to let us all work together in real time and finally begin integrating all our components sensibly.

Major General Robert Scales made several closing points intended to guide future debate.

- States are unlikely to risk outraging us. They know where to draw the line between pushing for maximum gain and goading the elephant into extreme anger.
- Today the military appears to be splitting between Navy-Air Force reliance on airpower and Army-Marine Corps reliance on ground power as the fulcrum for victory.
- We must look beyond 2010 to rethink and create a new military. Ten years passes in the blink of an eye. We can take it slow on technological reforms and investments for a decade and see what time brings.
- The issue is one of balance, achieving interdependence rather than interoperability. We must start with a vision and think it through, not rush.
- Soldiers cannot be policemen; that calls for totally different mindsets, cultures, and reactions under fire.

If we focus on people, the priorities for the next decade or two can be leader development, training and education, doctrine, and experimentation.

A New Approach

Listening to the conferees debate these challenges to national security suggests a new approach for the future. The defense budget should not be reduced but rather boosted modestly with two conditions: that three of the four defense segments be moved to the commander in chief, U.S. Special Operations Command, Secretary of State, and Attorney General and that the entire intelligence budget—black, gray, and white—be fenced and left to the absolute discretion of the Director of Central Intelligence.

We must create four forces after next, each trained, equipped, and organized to deal with one of four warrior classes that will arise in the 21st century. It will be difficult because three of the four will not be military, but rather parties skilled at transnational law enforcement, feeding populations, and the minutia of electronic crime and economic espionage. To accept this fact and lead the charge from in front is a challenge to the Secretary of Defense and his senior officials.

One might also propose that a slightly increased budget should be reallocated as follows over the next six years:

- 60 percent ($153.6 billion a year) to existing strategic nuclear and conventional forces, excluding special operations and low intensity conflict [4]

2d Marine Division (Timothy A. Pope)

Airmen and marines on joint trail/jungle patrol, Panama.

■ 20 percent ($51.2 billion) to CINCSOC, provided that no less than 5 percent (25 percent of the allocated amount—$12.8 billion) be earmarked for direct support, including full-time civilian manpower, to transnational law enforcement; this amount for law enforcement agencies is left with CINCSOC rather than lumped with the final 10 percent for electronic security because the intent is to have a military-based bridge to span the gray areas between paramilitary and coalition operations and direct support to law enforcement

■ 10 percent ($25.6 billion) to the Secretary of State to revitalize the U.S. Information Agency, Peace Corps, and selected sustainable development initiatives intended to deter or preclude conflict arising from shortages of water, food, and other resources and civil order [5]

■ 10 percent ($25.6 billion) to the Attorney General, who will serve as executive agent for government agencies responsible for various aspects of electronic security and counterintelligence.

The Active-Reserve Mix

The part played by the Reserve components (both the Ready Reserve and National Guard) is vital. Given proposed alignments, their role in the next century may be two to three times greater. In conventional units, the active force must restore its ability to fulfill intelligence, military police, combat support, and combat service support functions, with no less than 75 percent of all required capabilities in the active force and 25 percent in the Reserve. In low intensity conflict and missions in support of transnational crimefighting, the balance should be closer to 50-50, with the Reserve components providing the majority of foreign area officers, linguists, and other personnel with skills for special operations and low intensity conflict, and transnational criminal interdiction missions. A law enforcement reserve within the National Guard should be specifically considered.

For missions in support of the Department of State and international missions of mercy that involve political, religious, and environmental refugees, the Reserve components become far more important than the active force, and a 25-75 mix is appropriate. Major new units with regional, linguistic, and civil affairs skills should be

U.S. Army (Guadalupe Hernandez)

Abandoned Iraqi BTR–50 with missiles.

prepared for short- and midterm deployment in support of noncombat humanitarian assistance and sustainable development missions.

Finally, to provide electronic and counterintelligence protection for the intellectual property supporting our security and national competitiveness it is appropriate to return to a 50-50 mix, with uniformed and civilian active duty experts providing a disciplined and knowledgeable continuity of operations. And the Reserve components can be placed across the communications and computing sector, serving as a network of citizen-soldiers who, after the Swiss model, understand the threat and can move easily between military and civilian occupations.

This discussion of the active-Reserve mix should inspire a broad dialogue about completely redefining the role of the Reserve components. Only a small portion must be trained, equipped, and organized to conduct traditional conventional military operations. Indeed it may be that the largest portion of the Reserve force need not be uniformed nor be preselected and pretrained. Instead, we may find—and this is especially true of foreign area specialists and other experts—that we need a vastly expanded concept of the Reserves which allows short-term contract hiring of any expert anywhere in the world without obtaining a security clearance, a shave and haircut, or even basic military training!

traditionally, intelligence has been an afterthought within the defense community

The Public-Private Sector Mix

After putting their own houses in order, the greatest difficulty facing the Armed Forces and the U.S. Government is determining how best to divide responsibilities between the public and private sectors. The following rules of thumb might inspire legislative and financial incentive programs.

- Conventional military operations—75 percent government, 25 percent private sector sustainment
- Low intensity conflict/transnational crime—50 percent each (with special emphasis on private sector reporting responsibilities and auditing records and containers in support of law enforcement and compliance)
- Refugee and cultural operations—50 percent each (with emphasis on nurturing overt action and information peacekeeping operations by private nonprofit groups)
- Information operations and defending against economic espionage—25 percent government and 75 percent private (the Government can set the standards and oversee testing and certification laboratories, but the private sector must be convinced that it is ultimately responsible for protecting its own intellectual property).

Consideration of the private contribution to national security along a spectrum of complex and ambiguous threats suggests that a classified threat is not an actionable threat to the private sector. As Senator Daniel Moynihan noted, secrecy has significant policy and economic costs, including the inability to communicate to our most important allies (the private sector) the nature of the threat and their role in defending against it.

Intelligence

Traditionally, intelligence has been an afterthought within the defense community. We build extraordinarily expensive weapons and systems without regard for generalizations about strategic intelligence (acquiring systems limited to a few countries or lacking attention to mobility constraints characteristic of most areas of operation) or whether we have the sensor-to-shooter architecture and equally vital global geospatial data (we lack appropriate resolution for 90 percent of the world).[6]

Key to avoiding or resolving conflicts which threaten U.S. security and competitiveness is giving the Director of Central Intelligence the authority to rationalize national intelligence roles and missions and related capabilities. The intelligence community has three important but misguided agencies—the National Security Agency, National Reconnaissance Office, and National Imagery and Mapping Agency—that use bureaucratic stone walls within the Pentagon to avoid meaningful oversight. We process less than 6 percent of the signals and 10 percent of the classified imagery collected. The United States spends $12.6 billion a year gathering classified imagery but

26th Marine Expeditionary Unit (Mark D. Oliva)

Marine evacuating civilians from Albania, Silver Wake.

only $10 million buying commercial imagery for peacekeepers and warfighters. We continue to accept the complete absence of maps for most of the world on the 1:50,000 level where we coordinate fires.

A Balanced National Defense

The National Security Council may or may not be the body to provide day-to-day oversight of a balanced national defense. An alternative may be for the President to redefine and enhance the duties of the Deputies Committee and give a broader charter to the Attorney General and Secretary of State. The commander in chief, U.S. Special Operations Command, and the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict also need special handling, possibly by integrating the duties of the latter with the Assistant Secretary of Defense for International Security Affairs beneath an under secretary for peacekeeping who then would serve as the second DOD member of the Deputies Committee.

A bolder idea involves creating a deputy vice president for national security with command and control oversight of the Departments of Defense, State, and Justice while establishing a deputy vice president for the national commonwealth with oversight over the remaining bureaucracy.

Whatever management reforms are adopted with the advice and consent of Congress, there is an urgent need to put this plan in motion. The time has come to increase the operational reach and spending authority of both the Attorney General and Secretary of State while downsizing our conventional force structure and simultaneously doubling special operations capabilities.

Until the Secretary of Defense acknowledges the role of the Director of Central Intelligence and fences the intelligence budget under his preeminent authority, we cannot strike the proper balance between collection and processing, secrecy and intelligence, and an obsessive focus on conventional enemies and a more informed focus on the vastly more subtle and difficult threats and opportunities we face in three of the four warrior classes. We have met the enemy and it is us.

We must rebuild our national security community. *Joint Vision 2010* is not the answer, but the military has the answer within itself. Only the Armed Forces have the expertise, discipline, and resources to fund this revitalization, but it must accept and demand the engagement of the Attorney General, Secretary of State, and Director of Central Intelligence to initiate change. The Secretary of Defense must propose a unifying leadership position to the President with overarching authority to integrate military, peacekeeping, and law enforcement capabilities. It is DOD that must provide a broad vision, fund achievement of that vision, step back into its proper role as master of strategic nuclear and conventional military capabilities, and serve as coordinator and facilitator for civilian government operations against more complex and ambiguous threats facing the Nation. If it does, we will enter the 21st century ready to combat all enemies, both domestic and foreign. **JFQ**

NOTES

[1] The four threat classes that will arise in the 21st century are the high-tech brute (a state-based military with complex systems and heavy logistics trains); low-tech brute (a combination of criminals and non-state terrorist groups); low-tech seer (unarmed masses driven by religion, ideology, or circumstances); and high-tech seer (a blend of information criminals and economic spies). See Robert D. Steele, "The Transformation of War

and the Future of the Corps," *Intelligence: Selected Readings—Book One* (Quantico, Va.: Marine Corps University, 1992-93).

[2] Our systems acquisition continues to be characterized by the complete avoidance of tough issues of intelligence and logistics supportability. Programs such as the Army multi-billion dollar communications effort continue to assume that all needed data will be provided in digital form by the intelligence community or other sources and avoid planning for the hard tasks of discovering and digitizing critical external information (including maps and other foreign area information) and of communicating with coalition partners lacking space-age computers and the kind of bandwidth we consider commonplace.

[3] According to unclassified reports on the Gulf War, the Navy exhausted its precision munitions in eight days. There was also discussion of the difference in cost between an 8-inch battleship round ($800) and a Harpoon missile ($80,000) and of evidence that many precision munitions actually missed the target—either because of design flaws or inadequate targeting data from the intelligence community.

[4] Among other things such a cut should require a draconian reduction in U.S. subsidization of arms sales abroad and the end of virtually all military aid. Foreign aid need not be reduced, but it should be converted into peacekeeping dollars under the oversight of the Secretary of State.

[5] American leaders downplay the environment even if at times (under Secretaries of State Warren Christopher and James Baker) it has been declared a national security priority. Rwanda and Burundi were not about a clash of civilizations but shortages of water and food combined with a breakdown of the state, which caused tribes to revert to traditional forms of organization and violence—never mind that it required mass murder. The best "intelligence report" in this area remains the annual *State of the World* from the Worldwatch Institute (New York: W.W. Norton, 1997).

[6] The National Imagery and Mapping Agency (NIMA) acknowledges that 90 percent of the world is unavailable on the 1:50,000 level (10 meter resolution) at which most operations are coordinated. The best maps of the Third World, where most contingency operations are executed, are from the former Soviet Union, which has 1:100,000 coverage with contour lines at roughly $300 per map sheet. Commercial image maps with contour lines can be obtained for $6-10 per square kilometer on the 1:50,000 level. Despite defining a requirement for $250-500 million a year, NIMA only receives $10 million for commercial sourcing.

Entropy-Based Warfare:

Monitoring air strikes, *USS Enterprise.*

U.S. Navy (W. Pendergrass)

Modeling the Revolution in Military Affairs

By MARK HERMAN

A hypothesis first proposed by the Soviets in the late 1970s claimed that a new generation of precision weapons coupled with sensor and information architectures would lead to a revolution in military affairs (RMA). Such thinking is embodied in *Joint Vision 2010*. As the RMA concept develops, the international community must grapple with the impact of advanced concepts like information warfare and the advantages conferred by high levels of situation awareness on the battlefield. Unfortunately, inadequate comprehension of the dynamics of war beyond the attrition-based paradigm has constrained understanding of RMA.

Virtually all current models, simulations, and wargames are fundamentally attrition based. Analytically they often provide quantitative results that support one recommendation over another. But they do not account for many factors that affect the outcome. The few that do quantify factors like command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4ISR) lack an analytic construct to accurately account for their effects. They simply measure the influence of these factors as increases or decreases in attrition.

The analytic construct behind simulations influences the types of forces built and the kinds

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Bomb damage assessment, Desert Fox.

DOD

of wars fought. During the Cold War attrition-based simulations strongly influenced acquisition of lethal attrition-oriented systems. While continued reliance on a Cold War attrition-based paradigm is likely to perpetuate large military organizations, a more robust analytic construct could suggest ways to conduct warfare with smaller, more agile forces which are more suitable to implementing RMA concepts. Fundamental to such a paradigm shift is understanding the broader dynamics of warfare and the impact of emerging technologies and techniques.

The modeling paradigm presented here is predicated on the historical view that warfare can be directed against the cohesion of units or states rather than their components. Destruction of the ability of an armored unit to maintain situation awareness, coordinate actions, and apply its will can destroy its effectiveness just as certainly as the elimination of its systems using firepower. In this paradigm, the goal of a force is to disorder an enemy while maintaining its own cohesion.

A physics metric known as entropy can be used to describe disorder imposed on a military system at a given moment. Broadly defined, this metric is the steady degradation, of a system. It is thus the mechanism that measures enemy disorganization and ineffectiveness.

The inability of attrition metrics to account for entropy should raise questions about their validity and the limits of force-on-force paradigms. For example, DOD analytic models run prior to the Persian Gulf War almost universally predicted an attrition-oriented outcome involving heavy coalition casualties that never materialized. An alternate model based on the entropy metric which accounts for various factors affecting cohesion would have more accurately predicted the outcome. The hypothesis is that future warfare, in which our capabilities to affect cohesion will arguably be far greater than during Operation Desert Storm, cannot be adequately modeled using attrition as the primary measure of effectiveness.

Dynamics of Combat

Of the three principle dynamics of combat—force, time, and space—armed strength (force) is the most easily quantifiable and lends itself to analysis by straightforward attrition metrics. Because attrition can be explicitly assessed by

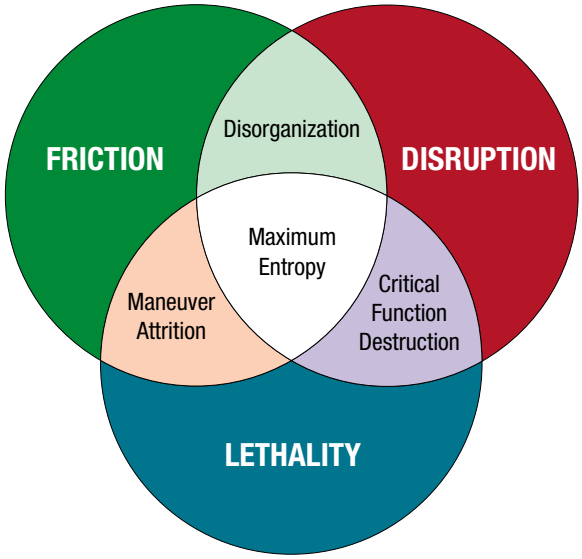
counting methods and statistics, it is the basic metric of military success. Theaters of war with high force densities can be reasonably represented using attrition and force ratios, symbolized by the European front in the Cold War when numerical measures of platform strength (tanks, ships, aircraft) defined force capability.

When a model or simulation emphasizes force to the detriment of other dimensions of war it fails to account sufficiently for such other vital features as friction, cohesion, and moral factors. By overemphasizing that element of warfare, Cold War militaries were inflexible and inappropriate for many missions at the lower end of the conflict spectrum. They would be equally ill equipped to handle RMA-style forces. In fact, in a post-Cold War era that puts a premium on flexible forces, the attrition metric is almost guaranteed to stunt development of new concepts and technologies.

entropy is the macro expression for the combined effect of friction, disruption, and lethality

By contrast modeling ignores that a key factor in military strength is unit cohesion: esprit de corps, morale, moral influence, training, and discipline. Within the analysis community no model accurately captures this term. The Joint Staff theater analysis model, though it explicitly quantifies cohesion as a mathematical factor in determining unit capability,[1] omits the Clausewitzian concept of friction. In its classical articulation, friction appears to be absent from all models of unit behavior currently in DOD usage.

Diagrammatic Representation of Entropy-Based Warfare



Attempts have been made to incorporate Clausewitzian friction in models. The RAND Corporation strategy assessment system, for example, has an explicit expression for friction, but it is fundamentally drawn from firepower and weapons performance data such as airpower effects on ground forces.[2] Other approaches have tried to account for friction by building hierarchical constructs which base the behavior of less detailed models on the output of more detailed models.[3] The problem with the latter approach is that the less detailed higher level models are calibrated by minutely specific attrition algorithms; thus the detail being added is simply more exact weapons performance data calculations. Alternate approaches attempt to include soft factors such as intelligence.[4] However, the use of intelligence is almost exclusively limited to applying varying degrees of targeting accuracy to weapon employment, a simple variable of attrition modeling.

Alternate Model of Warfare

Entropy, as noted in one research report on information warfare, is the macro expression for the combined effect of friction, disruption, and lethality on unit behavior.[5] For purposes of discussion, collective expression of current unit cohesion and capability is measured by the entropy level. As organizational entropy rises its capability decreases. A unit with no entropy can realize its full physical potential.

The entropy based warfare concept derives from the fact that a military force must maintain certain cohesive properties based on orderly construction and operation. As a unit loses cohesion, its entropy level increases until, at maximum entropy, it becomes a mob of individuals incapable of coordinating combat potential. The object of war has always been to bend an enemy to one's will, and a means to that end is to defeat an enemy's ability to resist.

The three rings of the accompanying Venn diagram represent the key factors that contribute to unit entropy. Friction comprises those activities the unit performs that increase its entropy level. Disruption includes those activities an enemy conducts to expand the unit entropy level. Lethality is the firepower a unit has to directly reduce an enemy through physical contact.

Where the factors converge, more severe entropy is possible. The intersection of lethality and disruption is the effect destruction of a critical node has on overall unit performance. It could be annihilation of its command staff or surprise attack where attrition is magnified by other factors. The intersection of lethality and friction is the physical loss of personnel or equipment because of breakdown or mines, which prevents a unit from achieving its desired tempo of operations.

Testing experimental systems, Fort Benning.

55th Signal Company (Aaron Robert Kughen)

The intersection of disruption and friction is the use of psychological operations and other information warfare techniques to reduce unit efficiency and cause paralysis. The central intersection where all three factors are coordinated is a more extreme expression of the previous three. In the near future these factors, combined with technological and organizational advances, may offer opportunities to exploit entropy-based warfare.

Implications for RMA

In theory a force based on an interconnected architecture will utilize advanced information assets to understand, locate, and target vital enemy capabilities. Through application of advanced long range munitions and information warfare techniques, an enemy force can be dismembered by coalescing military strength on precisely coordinated timelines from spatially dispersed locations. The platform-based force will find itself disconnected, unsupported, and unable to mass platforms. In this construct, the platform-based force is defeated before it can effectively respond because it masses force much more slowly than its munitions-based counterpart. Hence the munitions-based force finds a major war-winning advantage.

As concepts associated with network-centric RMA have evolved, key features have become evident. The first is that the revolution is information driven and has a high reliance on distributed interactive computer networks. These networks define new RMA military units just as hierarchical command structures defined platform-based units in the Cold War. It is believed that this shared view of the battlespace, enhanced by advanced simulation, will impart time advantages over less aware enemies.

Another key aspect of RMA is its use of precision munitions as the primary mechanism of destruction. The munitions are enabled by information networks that feed coordinates and terminal guidance instructions. In the past, massive munitions were required to account for the geo-location error of the target (like Allied strategic bombing during World War II). With the advent of RMA, both the geo-location error and the area affected by weapons stand in relatively equal proportions. If the position of a target is known, it is almost always hit with one weapon. With timely, updated information, there is a high

probability the target is still at its last sighted location, which gives teeth to the phrase *one shot, one kill*. It is a mix of information-driven networks and precision munitions that allows an information advantage to be translated into a step function increase in lethality over a platform-based force. This concept has been called network-centric warfare.

In this new form of warfare, networked computers and databases are manipulated to create a real-time picture of the battlefield that links all echelons through the commander's intent. Force interactions generate effects synchronized in time to inflict high order consequences on an enemy. These effects are captured by the entropy-based warfare paradigm. As enemy elements lose their cohesion, they are struck with overwhelming force to effect final dispersal and surrender. Attrition measures alone don't capture the intent of such conflict. This form of high intensity combat should change the character of the upper end of the conflict spectrum by displacing platform-based warfare of the past with munitions-based, network-centric warfare of the post-Cold War era.

situation awareness is the glue that joins a known past with an unidentified future

The center of gravity for RMA militaries is information and supporting networks. Without information superiority it loses advantages of time and force. Without that superiority, a network-centric force loses leverage to a platform-based enemy. Much as traditional combat occurs on land, at sea, or in the air, cyberspace is the arena for information combat. If an RMA force is unable to protect its networks from hostile responses, it could be vulnerable to older, less efficient, and more robust systems.

Emphasis on interconnected information systems gives information warfare greater direct leverage. With computer networks the way decisions were made and information was manipulated and passed radically changed as machines assumed human functions. This augmentation created opportunities to wage information warfare on timelines beyond human perception across global spatial dimensions. Hardware and software performance becomes a significant set of variables whose impact is not yet clear. The nation that first understands this dimension of the emerging RMA may gain an advantage similar to that German forces enjoyed in France in 1940.

Part and parcel with information warfare is information superiority. An accurate prediction of enemy actions is enabled by situation awareness taken broadly. That entails not only knowledge of locations and order of battle but of the state, location, and cohesion of both enemy and friendly forces and societies. It transcends simple force localization to encompass force capabilities both in terms of systems and the cohesion of the units possessing them. Situation awareness is the glue that joins a known past with an unidentified future. Thus information superiority is a *JV 2010* cornerstone on which all other considerations rely.

Vital to information superiority is space as the location for many components of advanced intelligence gathering and communication systems that support distributed information networks. Accordingly, the weaponization of space and attacks on these systems with lethal munitions will likely be a hallmark of combat in the 21st century.

In short, RMA in its current conceptualization is enabled by information-driven computer networks that confer information superiority, which stresses precision strike, dominant maneuver, information warfare, and space conflict, the key features of RMA. This construct suggests that the ability to quickly coalesce effects in time—as opposed to space—is a critical advantage of RMA. A platform-based force moves at the pace of the platforms. Air platforms can move at mach speeds, but the land and naval platforms move only in the tens of kilometers per hour. The network-centric RMA force moves at the speed of the munitions. Effectively, all munitions move at mach speeds whether glide bombs carried on air platforms or self-propelled missiles. To be efficient this force must acquire, interpret, and act on information in step with the tempo of its munitions.

When effects are coalesced in time, well within the ability of an enemy to react, the capacity to concentrate lethality against enemy critical functions can cause sudden surges in entropy. Vital functions lost to precision strike are often those that could otherwise reimpose order on units, such as senior noncommissioned officers and elements of command. The loss of vital functions and the resulting inability of a unit to heal itself can rapidly decrease capability to resist.

The RMA force still requires platforms for maneuver. But choices are broadened because light airmobile troops supported by precision strike can move at hundreds of kilometers per hour compared to armor-heavy troops of the Cold War. Their traditional drawback is vulnerability to opposing armor elements and anti-air capabilities. Information superiority and the ability to move comfortably within an enemy's reaction capability allows light forces to substitute maneuver agility for the protective qualities of armor. As heavy enemy elements react to maneuver, the information dominant force uses precision strike to

defeat them. RMA units can thus mass effects in time more quickly than heavy armor units can mass spatially.

Modeling military organizations with this analytic paradigm shows that critical factors in the RMA equation include an understanding of the impact of information content, synchronization of databases that share that information across networks, and the knowledge advantage of one side over another. Small differences in synchronization can measurably affect performance. Clearly units that move at tens of kilometers per hour are less sensitive to perturbations in synchronization, but those that move at mach speed have less margin for error. If an enemy could degrade network timekeeping, an RMA force could be thrown off with a related impact on performance.

The information network is the center of gravity in network-centric warfare. Portions of it will be damaged by enemy action in combat. The ability of a network to reroute, repair, or bring on additional nodes determines its robustness. If its performance is significantly impacted for any part of the force, information superiority, maneuver agility, and precision strike capabilities should suffer similar impacts. This loss of cohesion and the corollary rise in entropy could see the RMA force incapacitated while it sustains only low attrition.

Seen from this perspective, one is struck by the fragility of the RMA force if underlying information requirements are not met. However, when RMA military requirements are met, the platform-based military is outclassed in the key dimensions of force, space, and time. The use of attrition as the primary measure of effectiveness obscures more than it enables analyses of advanced RMA force concepts. Consequently, it is a woefully inadequate paradigm for evaluating future warfare.

The entropy-based warfare paradigm captures neglected aspects of conflict and allows other dimensions of the warfare equation to impact on a model's computational space. Where attrition-based models primarily emphasize quantity, the entropy-based model creates a more balanced view by emphasizing the physical impacts of attrition and asymmetrical effects of attrition, friction, and disruption on the unit or society.

The entropy-based warfare model uses an alternate, more encompassing metric for combat effectiveness. In addition, the entropy model should apply across the conflict spectrum. Guerrilla, mobile, and conventional war utilize lethality, friction, and disruption with different emphases that rely on strategic factors, relative strength, and character of the forces. When conflict is depicted in terms of friction, disruption, and lethality, the common threads that link various types of warfare become more visible and illuminate where the revolution in military affairs may be going. **JFQ**

NOTES

[1] Booz-Allen and Hamilton, Inc., *Theater Analysis Model* (Tysons Corner, Va.: Booz-Allen and Hamilton, 1981), p. 43.

[2] Paul K. Davis, *Modeling of Soft Factors in the RAND Strategy Assessment System (RSAS)*, no. 7538 (Santa Monica: The RAND Corporation, 1989), pp. 12–15.

[3] Paul K. Davis, *An Introduction to Variable-Resolution Modeling and Cross-Resolution Model Connection* (Santa Monica: The RAND Corporation, 1993), pp. 15–17.

[4] Steven C. Bankes, *Methodological Considerations in Using Simulation to Assess the Combat Value of Intelligence and Electronic Warfare* (Santa Monica: The RAND Corporation, 1991), p. 16.

[5] John Arquilla and David F. Ronfeldt, *Information, Power, and Grand Strategy* (unpublished) (Santa Monica: The RAND Corporation, July 1995), p. 19.

Joint Task Forces and Preemptive Response

Refugees near Goma, Zaire.

DOD (Andy Dunaway)

By EDWIN P. SMITH

Today U.S. and multinational forces must respond to crises around the world and across the conflict spectrum. Such challenges are often initially defined by the media. Responding forces thus must enter information age battles with non-lethal but critical fires against multiple targets. The outcomes can establish the political-military context for all actions that follow.

A joint task force activated to respond to a crisis must first determine actual contingency-response requirements—whether the assigned mission is derived from an established operational plan or a new situation in the area of responsibility of a unified command. If the effort is quick and everyone in the objective area agrees on the initial response, a lethal, protracted conflict may be averted. Multinational military assets may not be needed. That situation occurred during a U.S. European Command (EUCOM) contingency in central Africa. The operation taught lessons about tactics, techniques, and procedures related to preventing conflict and conserving resources.

Operation Guardian Assistance involved deploying joint forces from EUCOM in late 1996. They were sent initially as a humanitarian assistance survey team, which later formed the core of the Joint Task Force Guardian Assistance (JTFGA) staff. The first survey team personnel were tasked

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DOD (Andy Dunaway)

Soldiers guarding airport entry point.

to assess the need for participation by the Armed Forces in eastern Zaire and Rwanda.

The principal lessons dealt with understanding, defining, and dominating the information environment. From the first assessment carried out in the field in preparation for the U.N. steering committee meeting on requirements for a multinational force, accurate and timely information was essential for resource decisions. The task force made a major contribution in that process.

Setting the Stage

Events in September 1996 revealed a sharp increase in violence and discrimination by the Armed Forces of Zaire (FAZ) and the Former Armed Forces of Rwanda (EXFAR) on the eastern Zairian plateau, west of Lake Kivu. The major indigenous group was Tutsi, many descended from Rwandan Tutsis who migrated there some three hundred years earlier.

In April 1994, a bomb destroyed an aircraft carrying both Rwandan President Habyarimana (a Hutu) and Burundi President Ntaryamira. While no group was ever proven responsible for this act, the deaths sparked mass killing of moderate Hutus and of Tutsis by enraged Hutus. When the violence was ended months later by the Tutsi-led, Ugandan-supported Rwandan Patriotic Army (RPA), half a million people had died and over a million Hutus had fled to Zaire. Among the refugees were many people who had been directly responsible for genocide or connected with the former Hutu interim government.

refugees had been directly responsible for genocide or connected with the former Hutu interim government

With this tide of humanity came weapons in unprecedented numbers (from EXFAR and its suppliers). Free access to arms coupled with continuous cross-border operations into Rwanda molded EXFAR into a serious regional security threat, particularly to the government of Rwanda.

EXFAR operated from camps along the Zairian-Rwandan border. Ease of movement from this area allowed the force to conduct hit-and-run raids in Rwanda and melt back into the refugee population to be resupplied from stocks of humanitarian aid. Zairian troops were either unwilling or unable to stop these attacks, prompting warnings of military action from Rwanda.

In mid-October 1996 Zairian Tutsis, the *Banayamulenge*, began probing attacks against isolated FAZ units and civilian targets southwest of Bukavu. They struck Uvira in the south and Rutshuru north of Goma in a coordinated offensive, supported by RPA and loosely by the Uganda People's Defense Force. FAZ resistance crumbled as their unpaid, undisciplined troops became an unruly rabble looting their way north to Goma and south to Bukavu.

Camps in the path of the advancing conflict were fragmented as their occupants fled. Hutu refugees from Rwanda feared Tutsi retribution for the 1994 genocide of Tutsis in Rwanda. Camps north of Bukavu and south of Rutshuru eventually emptied as the refugees converged near Goma. An estimated 800,000 refugees crowded into a large complex, the biggest camp being Mugunga.

EXFAR established arms caches and command hubs at Mugunga where a labyrinth of tents and refugees provided perfect cover for insurgents. Increasingly reported in the media, moreover, was an emergency humanitarian crisis involving hundreds of thousands of refugees who allegedly were being held against their will, dying of starvation, and unable to help themselves.

After an exchange of EXFAR mortar and Banayamulenge rocket fire on November 9, most refugees in Mugunga chose an uncertain fate at the Rwandan border over certain death at the hands of EXFAR. Some 600,000 broke with EXFAR and streamed towards the Goma corridor.

Mission Starting Point

On November 1, 1996 the Chairman issued a directive to develop a tactical plan to facilitate relief operations and voluntary repatriation of Rwandan refugees. As with all EUCOM operations, Commander in Chief, U.S. European Command (CINCEUR), provided clear planning guidance and stressed thorough staff analyses, from mission statement to rules of engagement.

After its initial analysis, the EUCOM staff provided the following mission statement to the

DOD (Barbara Burfeind)

Navy surveillance aircraft in Uganda.

U.S. Army Southern European Task Force (SETAF) for tactical plan development:

When directed, EUCOM will conduct military operations in eastern Zaire, Rwanda, and Burundi in support of U.N.-directed humanitarian assistance and disaster relief operations. EUCOM will provide only unique military capabilities to alleviate acute humanitarian crises. If required, establish [a civil-military operations cell (CMOC)] *to transition all support to U.N. agencies and* [nongovernmental and private voluntary organizations].

CINCEUR also provided the following intent statement:

Rapidly assess the situation and recommend usage of unique U.S. military capabilities; complement/supplement designated U.N./civilian-led agencies, minimizing the requirement for U.S. military forces; utilize, to the maximum extent possible, the capabilities of contractors and non-DOD organizations; establish clear and achievable objectives; coordinate through the National Command Authorities for the employment of military force; transition and/or terminate support and redeploy; at all times, exercise the inherent obligation to protect U.S. forces; success is achieved when objectives are met or conditions requiring U.S. military assistance no longer exist.

The SETAF commander was also assigned to develop a mission statement and composition of the EUCOM survey team, which was to be ready to deploy to central Africa on order.

On receiving a second planning order from the Chairman on November 8, the new survey team, led by the SETAF commander, deployed November 13 to Entebbe in Uganda and met with officials from the government and the country team at the American Embassy in Kampala, Uganda. The following day it moved to Kigali, Rwanda, to meet government and nongovernment officials and continue assessing the crisis. Its initial force recommendations, forwarded within four days of arrival, helped determine both the size and scope of U.S. involvement. In addition, its assessment prompted a new mission analysis to address the changing situation on the ground.

The task force that would soon be deployed would be significantly smaller than planned. For example, the first SETAF/EUCOM troop-to-task analysis indicated the possible need for attack helicopters and combat ground forces. In light of the changed situation in eastern Zaire and the assessment by the survey team, the task force actually deployed primarily command and control, communications, intelligence, and logistical elements to support what was to become a series of information age close-in battles among many competing interest groups, to be known as Operation Guardian Assistance.

Early Planning

Initial planning conducted at Kelley Barracks in Germany and at Longare in Italy identified three probable bases for the humanitarian assistance survey team and joint task force operation: an intermediate staging base located at Entebbe, a forward operating base at Kigali, and the objective area—probably near Goma, Zaire.

The first mission essential tasks were:

- conduct assessment and identify requirements in support of the humanitarian assistance operations of the U.N. High Commission on Refugees, nongovernmental organizations, and private volunteer organizations in central Africa
- deploy forces into the joint operational area
- establish and protect intermediate stage base/forward operating base objective area forces
- establish CMOC interfaces
- execute security and facilitation tasks toward reestablishment of humanitarian operations wholesale distribution nodes
- position forces to hand over security/facilitation tasks to the U.N. High Commission for Refugees, nongovernmental organizations, and private voluntary organizations.

As each task was identified, an endstate and objective measures of effectiveness were developed to gauge progress toward mission task completion and handover of residual responsibilities.

initial survey team planning identified the need for a JTF task organization of some 3,000 people

Early planning called for the Air Force and main headquarters to proceed to the intermediate stage base in Entebbe. The forward headquarters, CMOC, and associated security forces were to establish operations at the forward operating base in Kigali. And an infantry force would prepare to secure warehouse distribution centers near Goma and furnish local security for nongovernmental organizations, and private voluntary organizations. However, the survey team assessment did not indicate the need for an operating base in Goma. With the November 15 exodus from Mugunga, the requirement to provide security for nongovernmental and private voluntary organizations also had diminished.

The changed refugee situation prompted a new crisis-action planning cycle by the task force staff at Entebbe with updated tasks: determine mission requirements based on input from Rwandan government and humanitarian relief agencies, continue to deploy appropriate forces for execution, establish an appropriate command and control (C^2) architecture, continue CMOC operations from the forward operating base in Kigali, inform and assist Rwanda in executing a synchronized information campaign, and conduct task handover on completing the mission.

There were two significant shifts in mission focus from the humanitarian assistance survey team planning phase conducted at Kelley and Longare and an assessment conducted on the ground. On completing the initial evaluation, U.S. efforts were intended to directly support the government of Rwanda as lead agency in the humanitarian assistance and repatriation operations. Also, rather than static and mobile security for relief agencies, the joint task force was to provide information to the local government and relief agencies on issues such as refugee locations, size, and directions of movement in eastern Zaire. Based on this new analysis, the primary JTF effort at Kigali became advisory assistance.

Initial humanitarian assistance survey team planning on November 4–13 identified the need for a JTF task organization of some 3,000 people, not including the tanker airlift control element. Within it were security forces and a forcible-entry capability to gain access to Goma.

The original task organization was established with Army, Air Force, joint psychological operations, and joint special operations components. CMOC was a separate function under the JTF staff and had a support role. However, as the mission evolved the entire joint task force was sized at under 400 personnel. Its new role became information enabler to Rwanda and relief agencies rather than a substitute for relief agencies.

Although the task organization remained service-component oriented, the internal structure of the joint headquarters changed. The Air Force used a tailored air operations cell rather than a joint forces air component commander element. The joint special operations task force consisted of a communications team and AC–130 for reconnaissance. CMOC was provided by the Army under the JTF headquarters. Moreover, the Navy prepositioned P–3 reconnaissance aircraft in the operational area. It conducted operations prior to deployment of the humanitarian assistance survey team and came under the operational control of the joint task force upon its activation on November 19.

Moreover, the headquarters structure and subordinate commands were reduced over time, applying a lesson from Operation Support Hope in 1994: as a function ends, its resources should be redeployed. The chief of staff monitored mission task completion and made recommendations on redeployment. Thus task force strength within the area of operations was kept to a minimum. In addition, liaison officers from France, Britain, Canada, and Italy monitored the assessment made by the survey team and task force operations.

DOD (Charles Parshley)

Unloading relief supplies from C–5B.

Operations around Kigali

The initial humanitarian assistance survey team and task force center of gravity was Kigali, where the Rwandan government was based and most relief agencies had Rwandan offices. After the survey team assessment and task force activation, JTFGA identified unique requirements in support of the local government and relief agencies involved in humanitarian assistance and repatriation. JTF immediately established a CMOC operation to do this.

At first, the relief agencies wanted military forces to separate belligerents in refugee camps, disarm criminals, and provide security for operations in eastern Zaire. However, some requests became moot once the refugees began returning to Rwanda. By November 19 it was apparent that Rwanda and the relief agencies only required accurate information on the size, location, and direction of refugee movements.

One reason there were few other military requirements was the aggressive humanitarian operations-repatriation preparations by the local government and relief agencies in Rwanda since the 1994 crisis. In 1996 they were ready with a coordinated and rehearsed plan for refugee support.

The commander and his forward headquarters operated between November 19 and 25 in Kigali to consolidate analysis and provide succinct situation briefings to the Rwandan government and relief agencies. This information helped these organizations to further preposition foodstuffs, medical assistance, and other life support along refugee routes. In addition, the local government could focus processing and repatriation efforts on Goma, the site of most refugee traffic, and also execute an information campaign to update returning refugees. Once refugee information channels were developed through the Rwandan government and humanitarian relief agencies, the main focus of refugee support became collecting and analyzing information on refugees in eastern Zaire.

Operations around Entebbe

Having identified the information requirement, the task force center of gravity reverted to Entebbe. Concurrently, the Canadian portion of the U.N.-sponsored multinational force had instructions from Ottawa to stand up. Canada was to prepare to lead the force.

JTFGA created an all source information center at Entebbe airport comprised of operations and intelligence analysts and planners, a national intelligence support team, and representatives of every on-site U.S. military reconnaissance asset. This team applied an Army doctrinal intelligence preparation of the battlefield collection methodology to this nonstandard mission.

Each collection asset was aligned against specific intelligence requirements, and the results were integrated daily to portray the size, location, composition, direction of movement, and intent of refugee groups in eastern Zaire. Products of the all source information center were provided to the Canadians, Rwandan government, and available relief agencies. Combined with early activities of the multinational force CMOC, formed in Kampala, collection and dissemination assets became the primary U.S. military contribution to further humanitarian assistance and repatriation efforts.

The task force maintained its headquarters at the intermediate stage base at Entebbe airport. Collocated with it were British and Canadian contingents and the organizational headquarters of regional relief agencies. In addition, many regional offices of relief agencies were located at the airport and in the capital, Kampala, which allowed close coordination through multinational force CMOC. As in 1994 the government provided a large airfield and ground security, which were indispensable in operating a staging area for military air.

Dèjá Vu

Similarities to Operation Support Hope allowed JTFGA to apply earlier lessons, avoiding some pitfalls while structuring itself to counter unavoidable ones. New conditions in the political and security environments and a different refugee situation led to some new JTF tasks in 1996. The unique military capabilities required were intelligence processing and related information support, civil affairs advice and assistance, and psychological operations advice and assistance. Whereas these same capabilities helped in 1994,

in 1996 they were essential to the government of Rwanda and humanitarian relief agencies.

As in 1994, task force operations were characterized by a rapidly changing environment, simultaneous planning and execution, and challenges posed by multinational operations and coordination with humanitarian relief agencies (with most nations, nongovernmental organizations, and private voluntary organizations having different perspectives).

Unlike 1994, opposing regional political agendas and Zairian army and rebel forces which were fighting in the joint operational area argued against using U.S. ground forces. Moreover, a massive return of refugees, coupled with the readiness and capability to receive them and provide life support through the government of Rwanda and relief agencies, precluded the need for a large multinational force.

as the survey team leader, the JTF commander built consensus and common understanding of the situation

While JTFGA demonstrated again that the U.S. military can execute contingency response tasks on short notice and render focused assistance, it did so differently than the joint task force in Operation Support Hope. It added a new chapter to the operational and tactical lessons learned two years earlier.

Humanitarian assistance survey team challenge. With clear terms of reference provided by CINCEUR, the humanitarian assistance survey team deployed to the area to make an assessment; establish interface with U.S. country teams, the government of Rwanda, and relief agencies; and prepare for follow-on forces. The real challenge was to conduct the assessment accurately and quickly to affect decisionmaking already underway in Washington, New York, and Ottawa.

The humanitarian assistance survey team deployed with subject matter experts—including some with experience from Support Hope—and initially sufficient automation and communications support. The proposed JTF commander led the team to provide added focus. Prior coordination and preparation by U.S. country teams in Kampala and Kigali allowed the survey team to quickly establish a base of operations and interact with government and nongovernment officials to develop assessment media.

Rwanda was stable. The local government and relief agencies had made detailed preparations for refugee repatriation. Two days after the survey team arrived, refugees from the Mugunga Camp began returning in mass. The situation thus drastically changed and just three days after arrival the team was able to recommend minimum deployment of select, discrete assets to address those identified support requirements which only unique military capabilities could satisfy.

As the survey team leader, the JTF commander built consensus and common understanding of the situation with the American ambassador to Rwanda, members of the Disaster Assistance Relief Team, and other representatives in country from the Departments of State and Defense. Despite common accord that large military capabilities were not necessary, political momentum at the United Nations was already moving toward wider action. Thus the Security Council supported its initial resolution calling for a large multinational military force despite the changed situation.

Tailoring JTF. As in 1994, the U.S. joint task force structure was developed around enabling forces and unique military capabilities that civilian alternatives could not immediately supply. Three capabilities were specified: information collection, analysis, and dissemination, civil-military operations support, and psychological operations support.

In the area of tailoring a joint force package to mission requirements, four basic lessons were revalidated. First the commander, working closely with EUCOM and service components supplying forces, had to constantly review, identify, and deploy forward only those elements really needed. Minimum footprint in size and duration of force presence was recognized as the primary way to protect them from start to finish. Flexibility was critical to ensure force flow in and out of the joint operational area by service component forces best suited for each task.

Respect for host nation wishes and ease of disengagement also called for continually tailoring JTFGA. The government of Rwanda made known its desire for a limited presence of foreign forces, both in size and duration, explicit from the start. Further, the government and the relief agencies were soon providing life support needs to returning refugees. With the help of the task force, the local government and regional relief agencies knew how many refugees could still return to Rwanda. They prepositioned stocks and otherwise made preparations to repatriate them. Once it was evident there was no further value added in CMOC and joint psychological operations task force operations in Kigali, the task force forward was redeployed to Entebbe. This gradual

Refugee camp, Zaire.

DOD (Andy Dunaway)

DOD (Charles Parshley)

Airlift coordination, Support Hope.

handoff of tasks and redeployment of excess capability allowed the commander to avoid dependency by relief agencies on JTFGA support and better protect the force.

The second lesson was that although JTFs by nature will always be more ad hoc than desirable, joint doctrine, training programs, and tactics, techniques, and procedures enable us to deploy packages of capability to execute most contingency missions effectively. This doctrine, added to training on joint operations with allies, again proved invaluable in all interface among multinational force advanced echelon elements in the joint operational area.

Participation in joint exercises and real world deployments by the SETAF core staff and augmenters after 1996 significantly enhanced the speed and efficiency of planning, deployment, and execution. Furthermore, CINCEUR directed and V Corps supported joint training exercises for SETAF. These took place only weeks prior to the deployment of a humanitarian assistance survey team and paid great dividends.

The third lesson was the importance of quickly deploying humanitarian assistance survey teams or an advanced echelon to the objective area to appraise the ground situation quickly. Team selection must be based on critical skills and functional needs anticipated in the joint operational area. Members of the JTF core staff are usually the most accessible for the humanitarian assistance survey team and facilitate the transition to subsequent operations. The proposed JTF commander should lead the team to ensure that a comprehensive assessment brings the best force package to the mission. In contrast to 1994, the inclusion of the deputy director of mobility on the survey team helped ensure

smoother deployment and sufficient visibility and control of the airlift flow.

Finally, placing JTF members and equipment forward with other select advanced echelon assets on the survey team greatly eases transition to full operations, allowing quick establishment of command and control and the efficient reception and integration of follow-on forces.

Task Force Roles

Understanding and dominating the information environment during fast-moving, chaotic, and ill-defined contingency operations is critical. As in 1994 information proved to be the greatest challenge. The focus of the information campaign was painting an accurate picture of the refugee situation (ground truth) by quantifying elements such as size, location, composition, direction of movement, and refugee intent—the hardest to verify. JTFGA spent considerable effort in setting up precise systems to report on the dynamic situation on the ground and communicate it to higher headquarters as well as the relief agencies, local government, multinational force, and media.

force protection training began prior to deployment and continued on arrival at the intermediate stage base

Information gathering followed the basic doctrinal approach. The principles of intelligence preparation of the battlefield and targeting methodology (decide, detect, deliver, and assess) were followed in creating the collection plan. Analysts and planners from J–2, J–3 (national intelligence support team), and J–5, supported by intelligence officers from the air reconnaissance platforms, assessed collection daily and recommended the collection plan for the next 24-hour period through a formal decision brief.

Off-site information was also leveraged to support collection or inject further requirements. For example, CMOC provided information or referred questions from humanitarian relief agencies while regional defense attachés furnished input from area governments and the national intelligence support team gave access to other information sources. The collection platforms used a variety of aircraft (P–3s, Canberras, and AC–130s) which were the most advanced and suitable available.

Information dissemination involved many players. Some interfaced in CMOC settings and others directly with the task force. Tailored products were designed for specific target audiences and graphic intelligence summaries, overhead imagery, information briefings, and periodic trend and refugee flow analyses were all used to portray refugee status.

Although this daily information dissemination was welcomed by most, it was contested by some. Overhead photography, albeit difficult to refute, did not eliminate exaggerated reports of refugee concentrations by the United Nations and other agencies, at least initially. Moreover, the various target audiences had differing perceptions of military requirements. While some contested the data for parochial reasons, most believed the military had the best means to provide an objective and accurate assessment of refugee group sizes and locations.

Central African governments, the regional media, and JTF itself agreed during the initial phase that the military could contribute significantly. As time passed, however, each party determined that the unique military capabilities were less and less necessary to the long-term humanitarian and repatriation requirements. The major contribution of the task force remained providing timely and accurate refugee information to the local government and relief agencies.

Another key task force role was advisory assistance. The object was to improve existing capabilities of the Rwandan government and relief agencies. As was learned in 1994, the operative terms were assist, facilitate, coach, teach, advise, reinforce, and leverage. These were repeatedly stressed in CINCEUR and JTF commander intent statements. A multifunctional pool of expertise allowed JTFGA to play this role. CMOC included both civil affairs and non-civil affairs officers with technical expertise (engineering, logistics, administration, medical) and extensive experience in both Africa and humanitarian operations. Two played key roles in 1994.

Members of the Kigali CMOC also reinforced the information flow between the Rwandan government and relief agencies. They ensured task force offerings were shared and identified coordination inefficiencies. The all source information center also tailored products to provide refugee information in the right detail and format for the local government and relief agencies. Moreover, CMOCs in Kigali and later Kampala played key roles in disseminating these analyses by both explaining and interpreting them, then assessing how well the information was understood. CMOC feedback allowed the task force to track crisis perception by the Rwandan government and relief agencies.

Civil affairs and psychological operations mobile training teams already deployed in theater were another benefit. They had worked with the Rwandan Patriotic Army toward the repatriation and social integration of Rwandan refugees. Their timing was perfect. Practical exercises by the

teams included visits to border crossings and communes where refugees were arriving. The teams in Rwanda had developed concrete programs to support efforts by both the government and relief agencies to receive refugees.

Force protection training—the top priority of CINCEUR—began prior to deployment and continued on arrival at the intermediate stage base. It covered threats in the joint operational area, environmental hazards, preventive measures, safety, sensitive items checks, physical and operations security measures, and individual/leader discipline and responsibility. With the joint task force, an Air Force-led force protection working group at Entebbe airport, supplemented by daily surveys of living and working areas, maintained constant focus. It used training materials developed by U.S. Army Europe and tailored to the joint operational area. Periodic briefings, inspections, and daily command emphasis on caution reduced illness and injury.

Furthermore, the top priority of the commander remained the identification of air defense threats (location, capability, association, and intent) against JTF air reconnaissance platforms over eastern Zaire. While no specific threat was isolated despite indications, the early establishment of an air operations cell to produce an air tasking order and solid air control measures reduced risks with the coordination of minimum altitude no-flyover of combat areas, diplomatic clearances, and monitoring of flights with the government of Rwanda.

Finally, Rwanda used the lack of a status of forces agreement to deter the establishment of a multinational force in country. Despite considerable effort by the JTF staff judge advocate and the ambassador and defense attaché in Kigali, the government avoided an agreement and failed to provide administrative protection to task force members. Thus the commander redeployed forward elements in Kigali to Entebbe as soon as their work was complete, a vital part of force protection.

The Armed Forces are uniquely suited to undertake crisis assessment and response. Joint doctrine and training prepare them for a range of operations on short notice. Joint exercises and operations increasingly facilitate the full spectrum of warfighting and peace support operations with precisely tailored modular packages. Force projection capabilities allow the Nation to rapidly deploy those packages to crisis areas.

Does this mean that a military force package should be the contingency response of choice? Not necessarily. A number of considerations suggest caution in using our forces for humanitarian assistance crisis responses (particularly where support may become long-term).

Costs associated with protracted peace support operations may degrade warfighting skills. Constantly employing the Armed Forces may atrophy other instruments of national power that are better suited to respond to certain crises.

The military may not always have a say in this process, but they should endeavor to help those who do to understand trade-offs in using U.S. forces for nonwarfighting problems. Mobile training teams that assist relief agencies, for example, may improve operations and reduce military involvement in future humanitarian crises. Advice in peace-support operations, through continuing peacetime engagement strategies around the world, should be wisely applied.

Many soldiers, sailors, marines, and airmen have learned valuable problem-solving skills. Training has given them the ability to apply their service, functional, and technical expertise. They have proven highly effective in responding to a wide range of crises around the world. **JFQ**

Meeting with Bosnian officials.

55th Signal Company (Alfredo Barraza, Jr.)

Today It's *Gold*, Not *Purple*

By SCOTT W. MOORE

Jointness—the *purple* paradigm—although a work in progress is outdated and insufficient. Contemporary civil-military operations require a smarter, more complementary approach to global turmoil. Terrorism, counternarcotics operations, peacekeeping missions, sub-state threats, and counterproliferation exceed the capabilities of any one Federal agency. This suggests the need to look at the increasingly vital, albeit extremely difficult, realm of interagency—or *gold*—operations.

To date this potential force multiplier and source of operational problems has been treated casually. The literature reflects the requirement for viable interagency organizations and processes but does not detail how to enable unified cross-agency operations. This article examines the 1980–92 counterinsurgency in El Salvador to highlight factors which determined its outcome, focusing especially on interaction between the U.S. Military

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Since the end of the Cold War there has been much discussion about the most likely threats in the future and how they impact on force structure, doctrine, and changing paradigms. Although there are few certainties that policymakers can use to predict the future, most would agree on one point: jointness is a military mindset that for whatever reason appeals to civilian and military leaders. While the joint train has already left the station, it will take years for the Armed Forces to institutionalize and comprehensively apply joint doctrine.

A New Paradigm

Genuine jointness has yet to arrive and recolor military organizations and operations. That is good, since purple is no longer in vogue. Today interagency teams are upstaging joint teams as the preferred instruments in times of crisis. Just as purple signifies jointness today, gold may be the hue of collective undertakings tomorrow.

Interagency operations have been crucial in El Salvador, Panama, Haiti, Somalia, and the former Yugoslavia. Yet the professional interest in and doctrine for such complicated endeavors is underdeveloped. If joint operations are a challenge, interagency operations are even harder. Thus the latter tend to be primarily personality-driven and are conducted on an ad hoc basis. Where the stakes are high the United States cannot afford to respond haphazardly. After a number of wake-up calls for the Armed Forces, interagency operations are here to stay. Any organization involved in projecting national power need to fully recognize and support them. Without institutionalizing an interagency bias, too much unity of effort will be sacrificed until workarounds eventually emerge. Military organizations especially must change to accommodate time-critical interagency operations such as counterterrorist and counterproliferation responses.[1]

counterinsurgency operations involve winning hearts and minds, which is a multiagency undertaking

The Vietnam Experience

Modern counterinsurgency doctrine (an interagency effort requiring coordinated reforms in the political, social, economic, and security environment) emerged in the 1960s. President Lyndon Johnson, frustrated by the disunity of operations in Vietnam, directed the establishment of a civil-military program known as Civil Operations and Revolutionary Development Support (CORDS). He wanted an interagency approach that encouraged "a better military program, a better pacification program that includes everything, and a better peace program." And until CORDS was formed in 1967, as one historian has recounted, "many Americans involved in South Vietnam, depending on their outlook or on which government agency they worked for, saw pacification as either civil or military but not as a joint civil-military process."[2] Such a procedure was precisely what CORDS embodied, with civilian members exercising control over the military who were in the majority.

"CORDS represented not so much a military takeover of pacification as the formation of an ad hoc civil-military hybrid."[3] It was responsible for establishing and implementing all plans and operations in support of pacification, to include providing advice and training for paramilitary units that furnished local security in urban areas and the countryside. In the end, despite some progress in pacification, the program was ill matched to the organizational philosophy of the military.

There is an ongoing debate about whether CORDS would have achieved more under other circumstances and which parts of the concept were most viable. Certainly it encountered stiff resistance from the communists, but the greatest impediment to success was the pervasive distrust of interagency operations manifest in bureaucratic politics, civil-military rivalries, and unrealistic expectations. No one left Vietnam unscathed. And because the United States did not win the war, the military tended to blame civilians for the outcome while the civilians blamed the military.

Joint Publication 3-08, *Interagency Coordination During Joint Operations*, acknowledged that interagency disunity existed: "The Vietnam conflict was often fraught with inefficiency among the myriad of U.S. Government agencies [that] operated independently, without much interagency coordination, and each was satisfied that its individual interests were being met. The consequence was a seemingly incoherent war effort." Agencies blamed one another for failures and setbacks. Distrust, skepticism, and finger pointing persisted. Counterinsurgency operations involve winning the hearts and minds of the people, which is a multiagency undertaking.

Shortly after the Vietnam War the United States embarked on a small interagency operation conducted by MILGP and USAID in El Salvador. At first blush it appeared chances were slim that two such dissimilar organizations could work as a team. Counterinsurgency theory called for a concerted multiagency effort against the guerrillas while organization theory indicated that the odds were against interagency cooperation and civil-military biases erected further barriers. Yet despite

Civil-military interaction during training exercise.

13th Marine Expeditionary Unit (Don L. Maes)

the overwhelming odds and a disjointed bureaucratic mechanism to deal with a complex problem, unity of effort improved in the latter stages of the war. Why did coordination increase between MILGP and USAID, and can it be achieved in interagency operations today? Examination of the interaction between these influential but dissimilar organizations indicates that their ability to realize their goals was ultimately a function of leadership, trust, shared experiences, and the nature of the conflict itself.

hippies (USAID workers) and snake eaters (SOF) will increasingly find themselves working together

Applying the Theory

Interagency initiatives offer little incentive for dissimilar agencies to cooperate, especially if cooperation endangers their institutional roles or interests. Organizations are essentially concerned with survival. In interagency operations, turf delineation becomes less certain and inefficiencies abound as bureaucracies under siege depend upon standard operating procedures to the detriment of the larger effort. The problem is compounded when organizations attack problems from their respective cultures, civilian versus military. The success in El Salvador largely focused on distinct agencies blending elements of national power. In an era of fiscal constraint there is also pressure to synchronize assets for maximum impact. As one analysis has indicated, "If the United States is to enjoy a measure of order and stability in the conduct of world affairs, this synergism must be routine, must occur across the spectrum of relations, and must be applied with vision. . . ."[4] This is the interagency challenge. Lessons can be drawn from the synergism of MILGP and USAID in El Salvador—two agencies that frequently work side by side around the world.

Teamwork is necessary to mount coherent counterinsurgency campaigns involving multiple agencies. Efforts to make orchestrated changes in the political, social, economic, and military arenas involve coordination, trust, and mutual support. Organization theory suggests that therein lies the dilemma. Success requires agencies to put aside differences and work toward a common good, but organizations see competition as survival of the fittest. Cooperating can disrupt the status quo, surrender hard-earned turf, or endanger organizational culture for intangible returns and more uncertainty. Job security and organizational performance are measured, justified, and evaluated on the basis of short-term egocentric norms, providing little incentive to cooperate with outside agencies regardless of magnanimous cross-agency rhetoric. Interagency coordination does make sense, but organization theory regards it as a pipe dream. That said, hippies (USAID workers) and snake-eaters (Special Operations Forces) will increasingly find themselves working together.

El Salvador

The prudent military agency will carry the interagency torch. The Salvadoran dilemma constitutes a recent interagency enterprise that warrants scrutiny with an eye towards institutionalizing those interagency imperatives that can improve contemporary operations.

In 1980 the problem of drawing a line against communist aggression in El Salvador was familiar though far from simple.[5] Farabundo Martí National Liberation Front (FMLN) insurgents (12,000 Salvadoran Marxist rebels allied to Cuba, Vietnam, and Nicaragua) garnered support from various groups with legitimate grievances.[6] They posed a threat to the 17,000 poorly trained and equipped troops of the ruling oligarchy. Most Salvadorans distrusted the regime because of the unaccountability of the military and violations of democratic processes. President Ronald Reagan sent a limited number of soldiers (primarily Special Forces), humanitarian workers, and diplomats to help quell the rebellion. The ad hoc team quickly discovered how fractured Salvadoran society really was as it applied counterinsurgency doctrine—an interagency undertaking under the rubric of foreign internal defense[7]—to a complicated and brutal civil war.[8]

For some time U.S./Salvadoran interagency responses were plagued by disharmony. One explanation of this failure was differing personalities and cultures. A retired American officer argued that "interagency coordination was very much personality-driven insofar as there was that

natural chasm between people who saw themselves as action guys and casual heroes (Salvadoran description of Special Forces) and [USAID] development guys who delivered the goods and really were concerned with the infrastructure and making programs work." Another explanation relates senior level intervention and emphasis. The director of the USAID special assistance program felt that "the only reason [his program] had any clout was [the support of] the ambassador. We had the support of USAID, but colleagues at the time saw us as CIA or counterinsurgency. We had a lot of criticisms internally. Some of that prejudice still exists." As an ex-MILGP commander has observed, interagency coordination "as it applied to [foreign internal defense] was not initially well developed. That was not because of a conscious decision on anybody's part not to [cooperate] but . . . a function of the fact that we were both decisively engaged with what we perceived to be our own areas of interest."

Counterinsurgency demands cooperation to win hearts and minds, yet organization theory explains why cooperation is so hard to achieve, and civil-military relations literature suggests that one should cube the degree of difficulty when disparate cultures hold hands. To take civil-military prejudices to an extreme—the military is viewed as killing and destroying to achieve its ends while civilians negotiate and toss money at a problem in order to keep it away from America's doorstep. In fact, interagency operations that are time-sensitive and require deliberate planning and execution as well as use of deadly force are usually performed best by the military. Few civilian agencies have the assets or skills to accomplish them.

Military operations require accountable and engaged leadership, established procedures and chains of command, and heavy stress on training and performance standards. The Armed Forces are believed to see the world in black or white while civilians argue about shades of gray. Civilian-run operations are less rigid in terms of leadership, interchangeability, and command and control. Civil authorities are more tolerant of individuality, disunity, and inefficiency, the characteristics of a democracy where civilians run the show. But the demands of postwar reconciliation, democratic palatability, widespread appeal, and overall effectiveness demonstrate that neither civilian agencies nor military organizations can succeed without the other. The equation is complicated in coalitions, where members of multinational forces act out their own civil-military concepts. The Salvadoran dilemma called for a cooperative process and an interagency response that defied the principles of organizational behavior and customary civil-military relations.

Reviewing the Literature

Interagency operations include El Salvador, Panama, Kuwait, Somalia, Haiti, and Bosnia. In Somalia 78 private organizations contributed relief support while over a hundred assisted with U.N. relief in Rwanda. Some 350 organizations are registered with USAID. While they represent a common modus operandi in today's world, literature on the interagency process is scant.[9] There has been little serious analysis of how to overcome the practical impediments.

The paucity of literature leaves the practitioner to develop causal determinants of success. Joint Pub 3-08 outlines the interagency process and participants and explains the evolving role of the military. Although it reaffirms the importance of coordination and unity of effort it leaves room for others to determine the important variables. The process recognizes the need for increasingly task-unified forces.

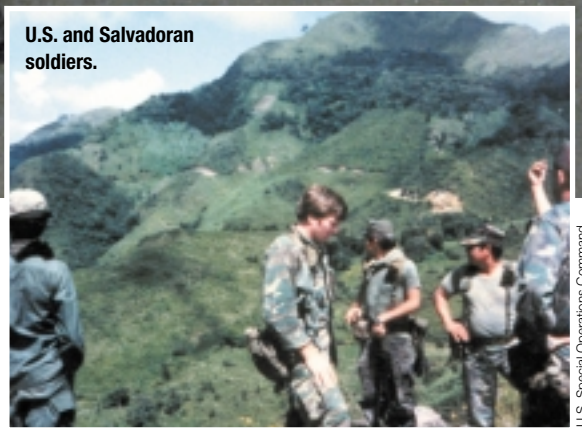
A synergistic interagency response is only part of the solution. The impediments to unified effort must be recognized, understood, and overcome if the response is to be greater than the sum of its parts. Cooperation—much less integration of competing efforts—is difficult but vital. Joint Pub 3-08, the latest publication that could have spelled out interagency imperatives, simply passes the buck: "Additionally, there is no overarching interagency doctrine that delineates or dictates the relationships and procedures governing all agencies, departments, and interagency operations. Nor is there an overseeing organization to ensure that the myriad agencies . . . have the capability and tools to work together." Taken as a whole, the literature acknowledges the inherent difficulties in the process but suggests that the answer can be found in improved operating mechanisms rather than personal training and relationships. But if interagency groups rest on their core competencies at the working level the emphasis belongs there.

Findings

The Salvadoran case study supports the contention that senior intervention in the form of clear guidance, persistent emphasis, and continual support is prerequisite to interagency unity. For without the ardent backing of the ambassador, MILGP commander, and USAID director, extended disarray would have been the rule of the day as the two organizations remained in their respective lanes. Viewed from outside, the need to get senior leadership on board to support the interagency

Providing security for Assured Lift, West Africa.

1st Combat Camera Squadron (Paul R. Caron)



U.S. and Salvadoran soldiers.

U.S. Special Operations Command

initiatives was a foregone conclusion, given the frustration at working level in each agency.

Improved coordination is another requirement. Mutual trust, shared stakes, and experience are important determinants for improving the interagency process. Trust in individuals translates into trust in their agencies. The more people work together, the more confidence they gain in each other, and the greater their efforts to maintain bonds and reputations. In turn, shared experiences build working relationships that underpin subsequent initiatives. Track records are also important, as are personal and organizational interests. These levels of trust, first with regard to people then to organizations, were key determinants of unity.

mutual trust, shared stakes, and experience are important determinants for improving the interagency process

Research has shown that variables played different roles during the three stages of this war. Stage I was the period before 1983 and the development of any national strategy or campaign plan. Stage II continued until 1987 when the *Municipos en Acción* (MEA) program started and FMLN turned to economic sabotage, and peace initiatives began. Stage III was the last part of the conflict, ending when the peace accords were signed in 1992.

Of the variables—trust, stakes, and experience—trust and shared experience contributed to coordination while stakes had little impact. During stage II the stakes went up (as did interagency coordination) as each party responded to pressure from Washington. When the stakes went down as it became evident that the guerrillas could not win, interagency coordination did not degenerate.

Scant resources and the irregularity of the conflict can be correlated with improvements in interagency support. Restricting the number of advisers as well as types and amounts of military hardware, and linking aid to human rights, complicated the activities of U.S. organizations, each of which would realize that mutual support was necessary before their individual goals could be met. Congress kept a tight rein on operations, which eventually drove each agency to develop techniques to alleviate shortfalls.

Did additional funding help or hurt interagency coordination? The more eyes that watched spending, the less flexible the bureaucracy became. However, since USAID had most of the funds for the counterinsurgency effort, Special Forces teams necessarily coordinated with—and solicited support from—USAID project managers. Despite the risk of graft, interagency coordination at the worker level resulted in an effective allocation, distributing cash directly to rural mayors under the auspices of the MEA program. Mutual support required routine information sharing.

As the nature of the conflict changed from a war of attrition to a competition for hearts and minds the demand for mutual support grew. Resources became less constrained during stage II, yet support still improved. Then, when resources were again scarce during stage III, the degree of interagency cooperation remained about the same.

The MILGP commander during stage I was frustrated when Congress fixed the number of advisory personnel at a seemingly nonsensical level of 55. Later he agreed that smaller is better in unconventional warfare.[10] But is that the American way? The initial plan in 1979 included 55 trainers, to be expanded to 250 as the crisis developed, although the original number proved nonnegotiable. Presumably that total seemed only a partial solution, but disunity flourished as more people entered the fray, which supports the contention that limiting personnel is preferable in interagency efforts.

The Road Ahead

There are four recommendations that flow from this analysis: hold interagency exercises, invest in the people who conduct them, educate leaders, and develop interagency organizations.

First, exercises educate leaders as well as practitioners. It is not enough to practice joint operations. Interagency scenarios are more probable and difficult. Realistic multiagency exercises encourage combined civil-military courses of action and provide shared experiences which can develop trust and understanding.

Second, people achieve interagency unity. If people matter most, invest in them. Problem solving requires education, training, initiative, and practice. Regional expertise involves more than language skills; it takes experience. As part of that investment, cross-cultural communication must be carefully honed. Personnel must know their counterparts in other agencies, develop trust, and shape conditions for mission success by living, training, and working together. The alienation of civilian agencies from military organizations must end. The fusion needed to create interagency teams must be proactive and deliberate, not ad hoc. This is a prerequisite for the modern warrior-diplomats who comprise Special Operations Forces.

Third, leaders who establish and guide interagency teams must be educated. Policymakers, diplomats, commanders, and planners can greatly influence how U.S. interests are conveyed, translated, and implemented. They must appreciate how agencies of the Departments of State and Defense will respond to their guidance. When Americans jeopardize their lives for poorly-defined objectives or improperly diagnosed problems, politics can be lethal. Fewer civilian leaders have military experience today. Consequently, they may view the military, especially special operators, as incapable of handling problems which require diplomacy and tact. There must thus be deliberate efforts to develop mutual confidence.

Fourth, if the interagency approach is best but is complicated by organizational pressures, why not create interagency organizations? Policymakers must institutionalize the process at the highest levels. Joint operations are simple compared to the disparate interagency combinations involved in contemporary civil-military operations. Civilians and the military will have to work side by side. Turf delineation will become less certain. The equation is further complicated when the context is global and other countries act in accordance with their own versions of civil-military relations. Until the concept of optimizing is redefined to include postwar reconciliation earlier in the process, interagency operations will be suboptimized by dated beliefs about democratic civil-military relations.

Gold should become the color of the new paradigm for an interagency approach to complex problems. If a country team can make it happen at the local level, why not have similar organizations at regional and national levels?[11] Enhancing interagency entities is essential to implement solutions to complex problems. Today counterterrorism responses are the result of a convoluted and ad hoc process which relies on innate human reactions. Is this what we really want or is it what we have settled for instead of making hard decisions and introducing real changes? **JFQ**

NOTES

[1] David Tucker describes the evolution of U.S. counterterrorism organization and the predominantly ad hoc interagency responses in *Skirmishes at the Edge of Empire: The United States and International Terrorism* (Westport, Conn.: Praeger, 1997), p. 224.

[2] Thomas W. Scoville, *Reorganizing for Pacification Support* (Washington: U.S. Army Center of Military History, 1982), p. 17.

[3] Andrew F. Krepinevich, *The Army and Vietnam* (Baltimore: The Johns Hopkins University Press, 1986), pp. 217–18.

[4] George T. Raach and Ilana Kass, "National Power and the Interagency Process," *Joint Force Quarterly*, no. 8 (Summer 1995), p. 9.

[5] See William M. LeoGrande, "A Splendid Little War: Drawing the Line in El Salvador," *Revolution in Central America,* edited by John Althoff (Boulder, Colo.: Westview Press, 1983), p. 27.

[6] Benjamin C. Schwarz, *American Counterinsurgency Doctrine and El Salvador: The Frustrations of Reform and the Illusions of Nation Building* (Santa Monica, Calif.: National Defense Research Institute, 1991), p. 8.

[7] Joint Pub 3-07.1, *JTTP for Foreign Internal Defense*, defines foreign internal defense as "participation by the civilian and military agencies of a government in any of the active programs taken by another government to protect its society from subversion, lawlessness, and insurgency." This broad definition frames a messy foreign assistance arena that is a veritable minefield.

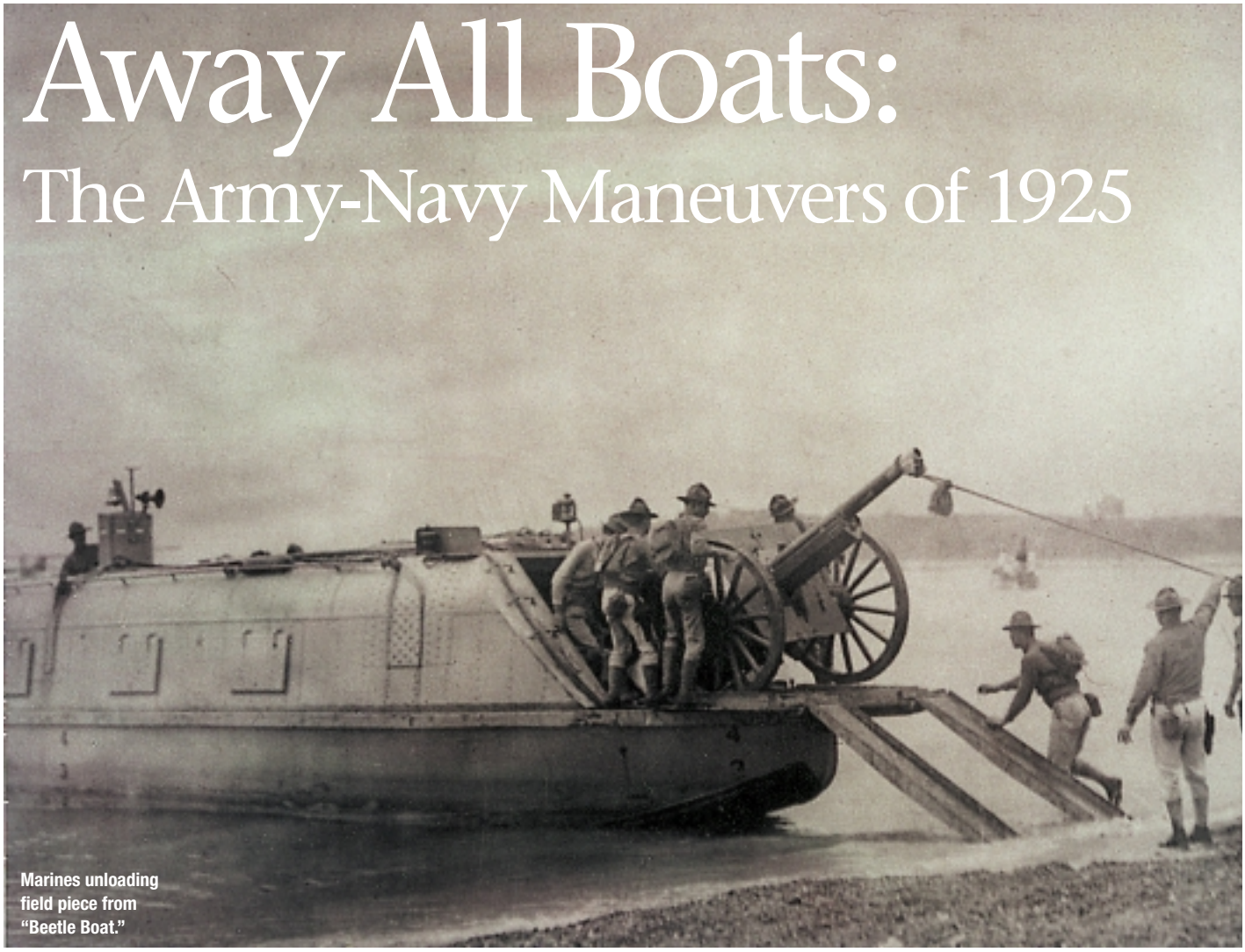
[8] American strategists considered El Salvador an ideal testing ground for learning how to fight small wars. See A.J. Bacevich et al., *American Military Policy in Small Wars: The Case of El Salvador* (Washington: Institute for Foreign Policy Analysis, 1988), p. 2.

[9] Useful sources on this subject include Thomas W. Scoville, *Reorganizing for Pacification Support*; Paul David Miller, "The Interagency Process: Engaging America's Full National Security Capabilities," national security paper 11 (Cambridge, Mass.: Institute for Foreign Policy Analysis, 1993); Margaret Daly Hayes and Gary F. Wheatley, *Interagency and Political-Military Dimensions of Peace Operations: Haiti—A Case Study* (Washington: National Defense University, 1996); William W. Mendel and David G. Bradford, *Interagency Cooperation: A Regional Model for Overseas Operations* (Washington: National Defense University, 1995); and George T. Raach and Ilana Kass, "National Power and the Interagency Process."

[10] John D. Waghelstein, "Ruminations of a Pachyderm or What I Learned in the Counterinsurgency Business," *Small Wars and Insurgencies*, vol. 5 (London: Frank Cass, 1994), p. 361.

[11] On establishment of coordinating organizations, see especially Thomas Gibbings et al., "Interagency Operations Centers: An Opportunity We Can't Ignore," *Parameters*, vol. 28, no. 4 (Winter 1998–99), pp. 99–112.

Away All Boats:
The Army-Navy Maneuvers of 1925



Marines unloading field piece from "Beetle Boat."

Courtesy of Leo J. Daugherty III

By LEO J. DAUGHERTY III

During the interwar years the services believed, as one naval officer wrote in 1924, that effective joint operations could be conducted "without regard to whether or not there is actual physical cooperation in the conduct of operations."[1] Successful cooperation depended only on the War and Navy Departments formulating a joint operating plan and upon "loyalty" to the plan by land and sea component commanders.[2] The Winter maneuvers of 1925 off Oahu in the Territory of Hawaii demonstrated that this concept of effective cooperation was inadequate. In fact, the maneuvers provided a stiff lesson in how not to conduct joint operations.

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Background

The Winter Maneuvers of 1925 must be considered from the vantage point of the post-war distribution of missions carved out for the War and Navy Departments by the Plans Division of the General Board of the Navy. The division's proposals were the "most important statement on American defense policy relating to the Pacific during the three years following World War I [1919–22]."[3] The division, serving under Admiral

Battleships off Hawaii, 1925.

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Albert Winterhalter, commander of the U.S. Asiatic Fleet and the board spokesman, sought to devise a compromise plan that would appease the Army and Navy. When formalized by the Joint War Board in late July 1920, the recommendations of the Plans Division became the national defense policy.

The Plans Division selected Pearl Harbor as the principal outlying fleet base. It also called for constructing additional bases at Cavite in the Philippines and on Guam and using San Diego as the major fleet operations and maneuver base in the Pacific. San Francisco would be the main domestic base on the west coast. The plan foresaw the Army protecting Navy facilities on Guam and Oahu through vigorous defense of the entire islands while providing security to Cavite "to the extent of the capabilities of the Philippine garrison and the fortifications of Manila Bay."

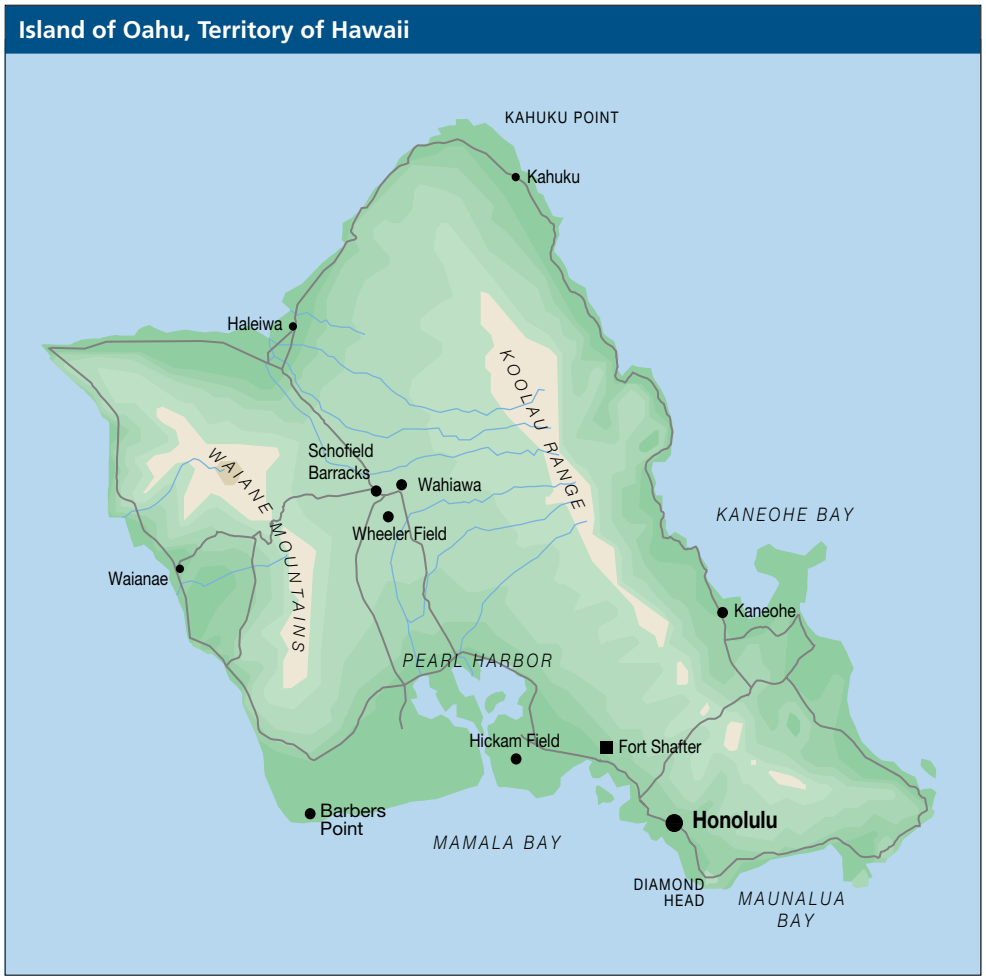
the Plans Division selected Pearl Harbor as the principal outlying fleet base

This entailed completing defenses at Manila Bay and Oahu and erecting works at Guam. The total forces believed necessary by the board to garrison the defenses at Hawaii, Guam, and the Philippines was 185,000 men, about double the existing field army.[4]

However, the austerity imposed by Congress on the War and Navy Departments in the 1920s, and the nonfortification clause that the United States, Japan, and Britain sanctioned at the Washington Naval Conference effectively forced the United States to concentrate on building up the defenses at Pearl Harbor, thereby massing its main striking power there for any Pacific contingency. Without a sufficiently large base on any other outpost (Wake, Guam, the Philippines, or the Aleutians), Oahu and the Panama Canal Zone became focal points in the 1920s and 1930s of a series of joint Army-Navy fleet exercises dubbed "flexes," which the War and Navy Departments used to test Army and naval aviation, naval gunfire, coastal defense, and several amphibious landings that focused on base seizure and defense.[5] The Winter maneuver of 1924, off Culebra, Puerto Rico, examined the defense of the Canal Zone. The Winter maneuvers of 1925 would test the other great bastion of continental defense, Pearl Harbor.

Defenses in Hawaii

By the turn of the century Oahu had become one of the largest and best equipped overseas Army facilities. Garrisoned shortly after Hawaii was annexed in 1898 and continually reinforced following the decision in 1908 to select Pearl Harbor as the principal naval base in the



Pacific, the outpost was maintained in a state of readiness as tension with Japan intensified. Oahu became the "springboard" where American military power would be assembled and deployed in the event of war.

In 1911, after a naval reconnaissance by the Commander in Chief of the Pacific Fleet, Rear Admiral Chauncey Thomas, determined that Oahu should be protected from all sides, an Army board under Brigadier General Montgomery Macomb decided the garrison should that be strengthened to six infantry regiments with supporting guns. It also established the "defensive lines on Oahu, beginning at the beaches [nearest to Schofield Barracks] and shortest line capable of covering Pearl Harbor and Honolulu." The Army warned, however, that unless the defenses were strengthened, an enemy force of 100,000 could take the island. In fact, to both protect Pearl Harbor and provide a defensible bastion as a forward base for extended fleet operations, the garrison was enlarged and in 1913 became the separate Hawaiian Department accounting for 11 percent of Army manpower.

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The Army mission as defined in the National Defense Act of 1920 embraced the defense of Pearl Harbor "against damage from naval or aerial bombardment or by enemy sympathizers . . . and against attack by enemy expeditionary force or forces, supported or unsupported by an enemy fleet or fleets."[9] It was a formidable task. The main group of islands extends some 400 miles from Hawaii, the island with two-thirds of the total land mass. Oahu, one of the four principal islands, is 604 square miles of volcanic rock and lush jungle with a subtropical climate and two natural harbors along its southern shore (see map at left) as well as the largest city, Honolulu, and a shallow lagoon several miles west. The Navy, with perhaps its best base outside the continental United States, realized at Pearl Harbor everything it lacked in Manila: an excellent harbor that was defensible and accessible in case of war with Japan. In fact, as a result of the Washington Naval Limitations of 1921 as well as a revision in War Plan Orange in 1924, the Pearl Harbor facilities took on increased importance.

Schofield Barracks—ten miles from Pearl Harbor in northwest Oahu—housed troops who would repel any amphibious landing to seize naval installations. Two Army airfields flanked Pearl Harbor: Hickam Field with bombardment aircraft was located on the Honolulu side and Wheeler Field with pursuit and fighter aircraft was adjacent to Schofield Barracks. The latter was the center of the Winter Maneuvers in 1925.

Black and Blue

The Winter Maneuvers of 1925—better known as fleet problem 5—began with the Pacific (or black) Fleet under Admiral Samuel Robinson conducting maneuvers off southern California. Emphasis was placed on refueling at sea, antisubmarine operations, and in-fleet screening. At the same time, the Atlantic (blue) Fleet, commanded by Admiral Josiah McKean, sailed from Atlantic

bases to Panama to "defend" the Canal Zone from the black fleet. The most notable aspect of the exercise was participation by the carrier *USS Langley*. Admiral Robert Coontz, the Chief of Naval Operations, impressed by the carrier's role as a scout for the entire fleet during the exercise, ordered two more carriers built.[6]

The Pacific Fleet then moved to Hawaii to participate in a joint operation with Army forces on Oahu under Major General John Hines. The Marine Corps, although beset by severe shortages due to manpower ceilings and overseas deployments, supplied 120 officers and 1,500 enlisted men who were collectively designated as 1st Provisional Brigade—largely drawn from the 4th Marines at San Diego and the 10th Marines at Quantico. Despite his modest force (the brigade was meant to represent 42,000 men), the Commandant, Major General John Lejeune, "welcomed the chance . . . to refute the Army contention that the Marines were incapable of conducting any operation larger than regimental size."[7] He also hoped the exercises would serve as a laboratory for Marine observers from the Field Officers School at Quantico.

The Commandant saw the maneuvers as indispensable in stimulating interest in the study, development, and refinement of amphibious tactics. He made the exercise part of that year's curriculum and had three of the most senior officers (Major General Wendell Neville, a future Commandant; Brigadier General Logan Feland, a combat veteran of World War I; and Colonel Robert Dunlap, a pioneer in developing amphibious warfare) attend with students from the Field Officers School to digest the lessons of the landings.[8]

Courtesy of Marine Corps Historical Center

With Hines' soldiers in the defense, the plan included an assault on Oahu to seize Pearl Harbor and Honolulu as the fleet screened the amphibious force, provided air and naval gunfire support, and conducted antisubmarine and mine sweeping operations. Army (black) forces totalled 16,000 men and were comprised of the regular garrison on Oahu as well as members of the Army Reserve and Hawaiian Army National Guard. They were assigned to repel landings and bombard enemy ships using aviation assets from Oahu and adjacent islands. The naval force assigned to assist the Army had 30 scout and torpedo-bombing aircraft, 20 submarines, and a few mine sweepers, mine layers, and light auxiliary craft. In addition to a small black fleet, the main fleet carrying the Marines consisted of a scouting force, *USS Langley*, the main body of battleships, cruisers, destroyers, and transports, and the fleet train consisting of supply, repair, and maintenance ships.

Across the Beach

As preparations advanced, *USS S–26* landed a reconnaissance team on April 25 to scout black defenses from Barbers Point to Honolulu Harbor. On coming ashore from the submarine the marines spotted a small flotilla of sampans that had been searching vessels entering and leaving the harbor. Avoiding the sampans and Army searchlights scanning the night sky over Pearl Harbor and Schofield Barracks, they penetrated the defenses of Honolulu as well as those of Fort Shafter before being spotted by soldiers from a field artillery battery.

The main exercise began on the same day with marines from the blue force landing to seize the airfield on Molokai Island. The force was comprised of the 4th and 10th Marines together with various ship detachments and supported by a battleship and 84 constructive (or hypothetical) aircraft from the Carrier *USS Langley*. Even before the planes took off, however, the umpires grounded them for the duration of the exercise, thereby denying sufficient air cover for the landing, and creating a source of contention between the Army and Navy in reviewing the event. The blue fleet arrived on station off Oahu at twilight on April 26. After feinting a landing at Maunalua Bay near Diamond Head, the ships took up position to land the embarked marines. With the major effort scheduled to take place along the northwest coast of Oahu, a secondary landing was planned at Barbers Point on the southwest corner.

As marines prepared to make a night landing, battleships, destroyers, and cruisers moved to bombard black defenses. Beams from searchlights

simulating heavy artillery filled the darkened sky as ships and shore batteries engaged in a mock counterbattery battle. In a replay of the Winter Maneuvers of 1924 off Culebra, Puerto Rico, marines—loaded in whale and ship's boats—awaited orders to go ashore. With waves pounding the sides of the ships, the Navy postponed the landing until first light. By then the surf and wind had calmed to permit a flawless landing.

Aircraft from both Wheeler and Hickam Fields sprayed the beaches with machine gun fire but failed to stop the Marine landing. The blue air force did no better. A few carrier based aircraft provided sporadic, ineffectual support for the landing force. During the post-exercise critique observers commented on the lack of cooperation between Army and naval aviation forces. The lack of a unified air command severely hampered proper employment of black air assets during the maneuvers. For several hours, *USS Langley* and its aircraft remained undetected and therefore free to position themselves against Oahu's defenses, giving blue forces an unfair advantage over black in employing air assets. Likewise, the umpires' grounding of blue air assets from the carrier severely hampered that force from properly reconnoitering and providing air cover for the fleet and marines ashore. This resulted in a terse letter from Admiral H.L. Yarnell, commander of Aircraft Squadron One, Scouting Fleet, to the commandant, 14th Naval District, on the absence of unified air command and proper notification and assignment of air missions.

Courtesy of Leo J. Daugherty III

Dion Williams, father of Marine amphibious reconnaissance.

Meanwhile, the Marines successfully assaulted the main defenses despite spirited resistence. At the same time, while the main force consolidated positions ashore and proceeded inland, the Army managed to repel the secondary blue landing at Barbers Point, inflicting "heavy casualties." Nevertheless, the feint drew sufficient enemy strength away from main landing areas. After marines penetrated inland near Schofield Barracks and Wheeler Field, Hines halted the exercise. The outcome was surprising and devastating from a strategic perspective: surprising in that the assaulting force could penetrate strongly-manned Army defenses despite its lack of numbers and airpower; devastating in that combined land, sea, and air forces demonstrated that Pearl Harbor, Oahu, and the surrounding islands were indeed vulnerable to a determined enemy landing.

Lessons Learned

The original intent of the exercises—to test the approved joint operations plans and special Army and Navy plans as well as new operational and tactical concepts—met with success. But the maneuvers also demonstrated that the services, notably the Army and Navy, had failed to implement the lessons of previous exercises. In addition, the fact that the blue forces could not effectively utilize carrier air assets reflected the ongoing conflict between the Army and Navy over coastal defense and aviation-related issues. Moreover naval commanders can be faulted for not understanding the necessity of better coordination and a unified air command.

The fact that the Navy could not bring its air assets to assist in the initial Marine landing and subsequent support pointed to the want of Army understanding of the value of the aircraft carrier in a naval campaign. Despite this last point, however, the Army can be forgiven since the concept of projecting airpower from the sea was in its embryonic stage. The Oahu maneuvers nonetheless highlighted often acrimonious disagreements over naval and Army aviation areas of responsibility. Army and Navy leaders consistently disagreed over such questions as whether the Navy should operate reconnaissance and strike aircraft from land bases and whether Army aircraft should operate against targets far out to sea.

For the Marine Corps and amphibious warfare, the exercise was only a slight improvement over the Culebra maneuvers of 1924. The lack of suitable landing craft, adequate communications, and expertise in loading and disembarking equipment again plagued the landing. Marine Brigadier General Dion Williams, in summarizing the exercise, emphasized that the most essential factor in an amphibious landing was to "get men and matériel . . . on the beach in the shortest possible time with the least confusion and in the best condition for immediate action. . . . It is therefore vital that every effort should be made to provide beforehand suitable means. . . ." [10]

Williams pointed out that despite many landings by the Marines (and Army), whale and ships' boats were not suitable and that "during the last twenty years numerous plans have been made for special craft, but so far little has been done. . . ." Hines told students at the U.S. Army War College he held "no doubt that highly-trained, well-led infantry can establish a beachhead once the troops are ashore—but getting ashore, there's the rub."

Marines and soldiers disembarking.

Courtesy of Leo J. Daugherty III

Another lesson of the maneuvers was the necessity to carry a large air force with the fleet to support landings and engage defending air forces, which could be a serious threat to troops coming ashore, especially during early stages of the landing. The fact that the blue force had been denied use of carrier air assets before the amphibious assault would have meant disaster in combat. Navy officials claimed the Army sought to sabotage aircraft from *USS Langley* to prove the efficacy of land-based airpower at the expense of naval aviation with its potential for coastal defense.

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The need to train personnel to disembark from transports on open and choppy seas as well as from landing craft once ashore was also demonstrated. Williams stressed that there would "be great confusion and delay in carrying out landing operations on a hostile coast against strong enemy opposition, especially at night when such landings will have to be made in time of war."[11]

Another lesson was the need for better communications and the importance of radio, field telegraph, and telephones during both ship-to-shore and land operations. General Williams wrote that such devices must be portable and that "every effort should be made to provide apparatuses of this nature of such weights and sizes that will allow of easy transportation in the boats and after a landing. . . ."

The Oahu Maneuvers, dubbed the grand joint Army-Navy maneuvers, demonstrated the necessity of closer inter- and intraservice cooperation. Despite the stormy Army-Navy relationship during the post-war battle over roles and missions, particularly in regards to coastal defense and aviation, the fact that two services could come together in what was only one of several joint exercises in the 1920s and 1930s proved that the services complemented one another—the Navy at sea and the Army on land as well as the ongoing Marine Corps interest in amphibious warfare. This recognition was codified in *Joint Overseas Expeditions* (1927) and iterated in subsequent joint publications. Nonetheless, budget constraints and inter- and intraservice disputes over missions nearly derailed the cooperation and spirit of jointness which existed briefly during the mid-1920s.

The maneuvers also revealed ongoing unresolved questions in forging an effective amphibious warfare doctrine. The fact that the services had failed to learn the lessons of the Canal Zone and Culebra pointed to both a lack of awareness on the needs for properly landing an amphibious force and a failure to rectify problems from previous exercises. This can be seen in the need for suitable landing craft and boats. While the 1925 maneuvers were far more successful than those at Culebra a year earlier (due primarily to better surf

and landing conditions), the fact that troops again landed in ships' boats and that there had been no movement toward developing proper landing craft pointed to an institutional failure on the part of the Marine Corps and Navy. This problem continued until the mid-1930s when the Marines, free from expeditionary duty and with the prospect of war, were able to concentrate on the lessons of the 1920s. Through these failures the Marine Corps and belatedly the Army and Navy developed amphibious doctrine. According to General Holland Smith, the events gave an impetus to writing the *Tentative Landing Operations Manual* in 1934. Its ideas "not only carried us through Tarawa, Normandy, and Iwo Jima, but still stand, to this very day, as the basic amphibious methods of the United States."[12]

For the Army, the exercises pointed to the requirement for increased manpower on Oahu. Hines stated that "7,000 more men were needed to adequately defend Hawaii."[13] Ironically, that figure was in line with a report published by the U.S. Army War College in 1915 which called for a full division of 23,000 men. The exercise indicated that more had to be done to strengthen Oahu against an amphibious assault and forge better ties with the Navy. As the events of 1925 revealed, such matters were only initially being addressed at the time of the maneuvers.

In sum, the Oahu Maneuvers of 1925 pointed the services in the right direction despite the bitter interservice relations of the first half of the decade. The fact that the Army and Navy could forge an effective joint doctrine in the wake of the controversy over coastal defense and roles and missions in defending outposts in Hawaii, Guam, the Canal Zone, and the Philippines, as well as in presenting doctrine in a series of joint publications on overseas expeditions, gives credit to forward-looking officers in both the War and Navy Departments.

Yet affairs among the services were not harmonious after the Hawaiian maneuvers. It was obvious to all participants that more had to be done to achieve cooperation on the strategic and operational levels in defense of Oahu. Indeed, after the maneuvers and fleet exercises in the late 1920s and early 1930s it was apparent that the lessons of 1925 had been all but forgotten. It was only because of personal persistence and institutional necessity that a working relationship could be achieved at all as the Nation drifted towards war in the late 1930s. **JFQ**

NOTES

[1] W.S. Pye, "Joint Army and Navy Operations—Part 1," *U.S. Naval Institute Proceedings*, vol. 50, no. 12 (December 1924), p. 1963.

[2] Ibid., p. 1964.

[3] William Reynolds Braisted, *The U.S. Navy in the Pacific, 1909–1922* (Austin: University of Texas Press, 1971), p. 482.

[4] Ibid, pp. 207–08.

[5] See Robert G. Kaufman, *Arms Control During the Pre-Nuclear Era: The United States and the Naval Limitation Between the Two World Wars* (New York: Columbia University Press, 1990).

[6] J.E. Kaufman and H.W. Kaufman, *The Sleeping Giant: American Armed Forces Between the Wars* (New York: Praeger Publishing Company, 1996), p. 41.

[7] Kenneth W. Condit and Edwin T. Turnbladh, *Hold High the Torch: A History of the 4th Marines* (Nashville: Battery Press, 1989), p. 105.

[8] Ibid., p. 106; Clifford, *Progress and Purpose,* p. 35; Millett, *Semper Fidelis,* p. 327.

[9] Braisted, *The U.S. Navy in the Pacific,* pp. 42–43.

[10] Dion Williams, "Blue Marine Expeditionary Force: Joint Army and Navy Exercises, 1925," *Marine Corps Gazette*, vol. 10, no. 2 (September 1925), p. 87.

[11] Ibid., p. 88.

[12] See Holland M. Smith, *Coral and Brass,* 3rd ed. (Quantico, Va.: Marine Corps University, 1989), pp. 55–63. One of the more controversial memoirs of World War II, it is biased and displays the same controversies that characterized Smith's tenure as V Amphibious commander in the Central Pacific during 1943–45.

[13] Kaufman and Kaufman, *The Sleeping Giant,* p. 42.

General Curtis Emerson LeMay

(1906–1990)

Chief of Staff, U.S. Air Force

VITA

Born in Columbus, Ohio; graduated from Ohio State University and commissioned in the Army (1928); attended Air Corps Primary and Advanced Flying School (1928–29); served in 27th Pursuit Squadron (1930–34); assigned to 18th Pursuit Group (1934); operations and intelligence officer, 49th Bombardment Squadron, Air Force General Headquarters (1937–39); Air Corps Tactical School (1939); commanded B–17 (1940); operations and intelligence officer, 41st Reconnaissance Squadron (1940); commanded 34th Bombardment Group (1941); commanded 305th Bombardment Group in California and England (1942) and Third Bombardment Division (1943–44); commander, 20th Bombardment Command, Pacific (1944–45), and 21st Bomber Command (1945); served as deputy chief of Air Staff Research and Development (1945–47); commander of U.S. Air Force in Europe (1947–48); commander in chief, Strategic Air Command (1948–57); Vice Chief of Staff, U.S. Air Force (1957–61); Chief of Staff (1961–64); died at March Air Force Base, California.

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Portrait by Sandor Klein.

Even if centralization could provide an organization without competing centers of power, its advisability would be questionable. I do not believe a monolithic organization can consistently provide useful answers in a field as subjective as defense policy. Such a goal mistakes the very nature of national security policy. Policy must provide for varying judgments of both ends and means. To the extent that the Department of Defense organization fails to provide for the development, expression, and consideration of opposing views, and for a clear determination between them, policy formulation will suffer and the effectiveness of the Secretary of Defense will diminish.

—From *America Is in Danger* by Curtis E. LeMay

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INNOVATION AND THE IMPERIAL JAPANESE NAVY

A Book Review by
THOMAS G. MAHNKEN

Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887–1941
by David C. Evans and Mark R. Peattie
Annapolis, MD: Naval Institute Press, 1997.
661 pp. $49.95
[ISBN 0–87021–192–7]

Heavy cruiser *Atago*, 1926.

Naval Historical Center

Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887–1941, fills a void in the literature of both military history and strategic studies. It can be read as an account of the development of Japanese naval technology, a study of bureaucratic battles over new weapons, concepts, and doctrine, or a history of Japanese naval strategy and operations. The text is lavishly illustrated with photos, figures, and maps. Above all, the authors provide a thoroughly researched work of that will interest the historian and military professional alike.

The evolution of Japanese naval power in the five decades leading up to World War II was a significant event. The Imperial Fleet was founded in the wake of the Meiji Restoration in 1868, which unified Japan. Although they lacked the infrastructure of Europe or the United States, over the next forty years the Japanese managed to construct a navy that was strong enough to decisively defeat a regional power, China, as well as a great European power, Russia. By 1920 Tokyo had the third largest fleet in the world. Despite continuing industrial inferiority—and with an economy that was one-ninth the size of America and heavily dependent on imports of raw materials—Japan was sufficiently powerful to directly challenge the U.S. Navy in the Pacific by 1941.

The Japanese navy emulated foreign practices and evolved innovative concepts of its own. Not surprisingly, Tokyo looked to the world's most powerful fleet—the Royal Navy—as the model for modernization. Evans and Peattie describe efforts by Japan to purchase the best naval technology and to build an impressive domestic arms industry. By the early 20th century, this process yielded a fleet that was better organized, trained, and equipped than any other in the region.

The book sheds new light on the performance of the Imperial Fleet in the Sino-Japanese and Russo-Japanese wars. Drawing on the Japanese secret history of the latter conflict, for example, the authors offer new details on the Battle of Tsushima, one of the most decisive naval actions of the century. The result is a more balanced account of performance during the war, highlighting the success of Japan against Russia while revealing various miscues. Evans and Peattie also describe how these two conflicts spawned a unique Japanese approach to naval thought that dominated strategic and tactical discussion up to World War II.

Kaigun should interest all students of military innovation. There has been an abundance of recent works on the development of doctrine, organizations, and technology to solve strategic and operational challenges. The majority have been focused on the great powers. Evans and Peattie, however, illuminate problems associated with innovation in a developing state. Indeed, readers may find the account of Japan's naval progress in the interwar period suggestive of techniques that future regional competitors may employ against the United States. Although the Japanese sought to perfect a strategy that embraced "interception-attrition operations" to exclude the United States from the Western Pacific, future foes may attempt to deny access to forward bases.

The most fascinating section of this book deals with efforts by the Japanese Imperial Navy to develop the innovations needed to defeat the larger, more advanced U.S. Navy. Forbidden by treaty from matching America quantitatively, Japan sought to exploit operational and technological niches to inflict disproportionate damage. Under the rubric of "using a few to conquer many," the Japanese developed comparative advantages such as long-range torpedo combat, night operations by surface units, and a tactic of outranging the U.S. fleet with subsurface, surface, and air forces. The Imperial Navy also designed and produced weapons needed to implement its strategy. During the early 1930s it deployed the first oxygen-propelled (Type 93) torpedo, whose range, speed, and payload far exceeded American and British models. In 1940 it fielded the Mitsubishi A6N "Zeke," the world's foremost carrier-based fighter. While Japan lagged behind the United States and Great Britain in high-technology systems like radar, it built less-advanced sensors, including superior optics and searchlights. By 1940 the Japanese were much the equal of their British and American foes in training, technological innovation, and tactical proficiency.

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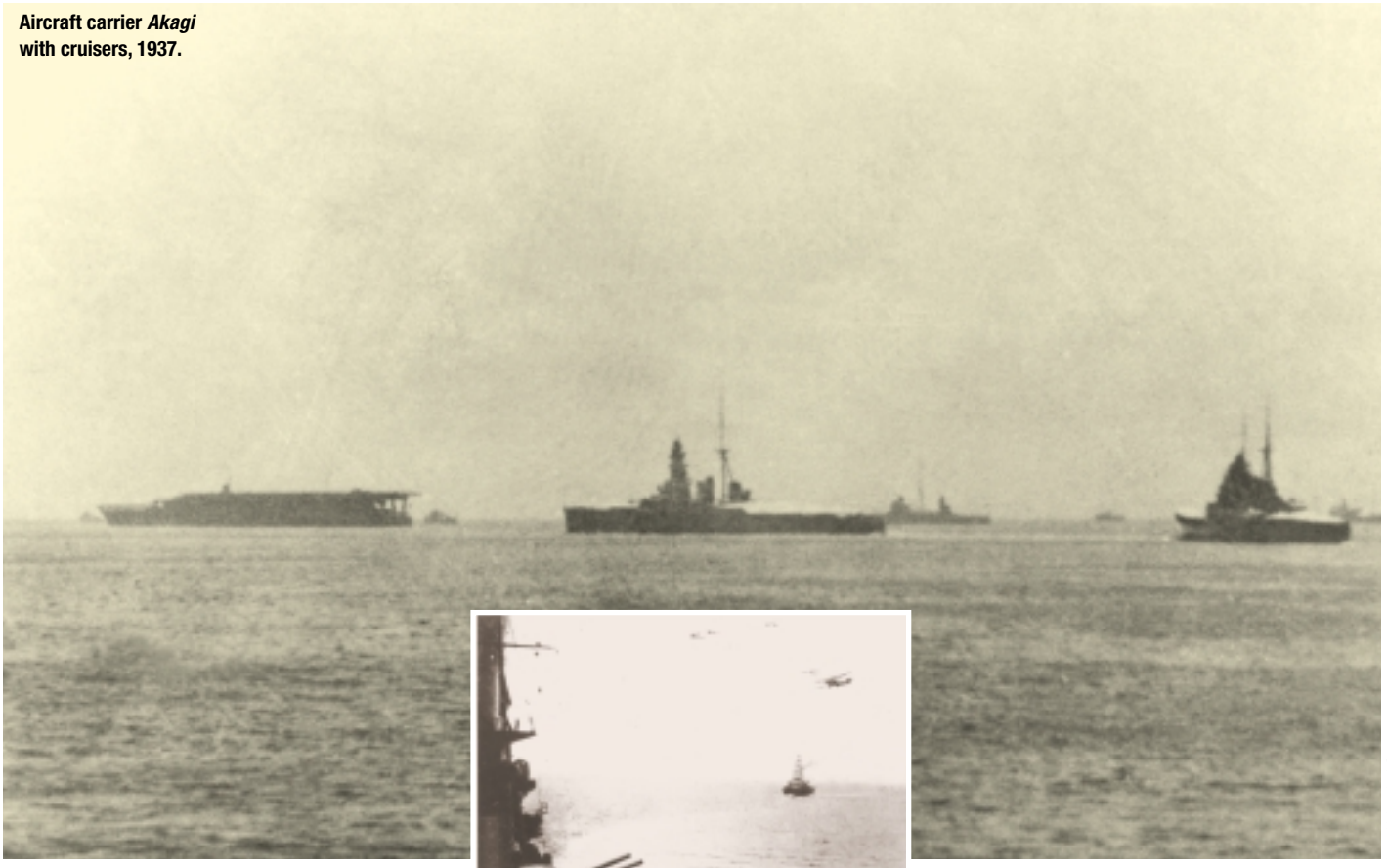

Aircraft carrier *Akagi* with cruisers, 1937.

Naval Historical Center

While the authors detail the success of the Japanese prior to World War II, they also explain their defeat at the hands of the United States. Evans and Peattie examine, for example, how the desire for a quick, decisive victory led Tokyo to neglect unglamorous but vital dimensions of operations such as logistics and personnel policy. Because its leadership assumed that a war with America would be decided by a single battle, the Japanese ignored such capabilities as commerce protection and antisubmarine warfare, deficiencies which became crippling vulnerabilities in a long war of attrition. The authors also demonstrate Japan's weakness in intelligence and cryptology, both vital to U.S. victory.

This book clearly establishes that tactical effectiveness is no substitute for sound strategy. Japan failed to effectively harness its national resources for a war with the United States. Instead its army remained committed to a conflict in China, while its navy became increasingly enamored of an advance into Southeast Asia. In planning such a campaign, the naval leadership fell prey to circular reasoning. In the climate of worsening Japanese-American relations during the late 1930s, the Imperial Navy expected Washington to reduce or eliminate oil exports. Since the United States was its major petroleum supplier, Tokyo would be obliged to look to the Netherlands East Indies. But conquering the oil fields of the Indies would embroil Japan in a conflict with Washington that it could not win without access to those oil fields. The authors find little evidence to suggest that national leaders ever sought alternatives to reduce the potential for war with the United States.

Naval Historical Center

Battleship *Fuso*.

Kaigun complements other literature on this period, including *A Battle History of the Imperial Japanese Navy, 1941–1945* by Paul Dull (Annapolis: U.S. Naval Institute Press, 1978), and *Combined Fleet Decoded: The Secret History of American Intelligence and the Japanese Navy in World War II* by Hahn Prados (New York: Random House, 1995). Evans and Peattie have written a book that is far superior to previous histories. Not only do they blaze new trails by chronicling Japanese naval developments; they also explore well-worn topics such as the planning for Pearl Harbor. In short, this work will set the standard for further research on the Imperial Japanese Navy. **JFQ**

RETHINKING MODERN WAR AND TECHNOLOGY

A Book Review by
SHAWN C. WHETSTONE

The Principles of War for the Information Age
by Robert R. Leonhard
Novato, California: Presidio Press, 1998.
287 pp. $29.95
[ISBN 0–89141–647–1]

Serious students of military history seek to discover principles to improve the odds of winning future conflicts. Since many believe that we are in the midst of a revolution in military affairs driven by information technologies, an examination of the tenets of military thought seems particularly timely. *Principles of War for the Information Age*, skillfully accomplishes that task.

This volume advances the author's thinking on military affairs begun in two earlier books, *The Art of Maneuver: Maneuver-Warfare Theory and Airland Battle* and *Fighting by Minutes: Time and the Art of War* (reviewed in *JFQ*, Autumn 1995). Whether readers agree or disagree with him, this latest effort by Robert Leonhard should provoke discussion and further establish his position as one of the preeminent contemporary American military theorists.

One might expect on opening this book to find yet another treatise on information warfare. Not so. The author digs deeper to address the fundamental concepts of conflict. Unwilling to simply critique his subject, Leonhard thoroughly dissects the principles that govern warfighting doctrine, then constructs a new set of principles for warfare.

The Principles of War for the Information Age has two distinct parts. The first examines the conventional wisdom on warfighting. The second derives new principles to guide our thinking on future conflicts. Although the book reveals a discernable slant toward the Army perspective on land warfare, the ideas it espouses are applicable across service boundaries.

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Despite the title of this work, the author doesn't look for answers in the wonders of information technology. Rather, the potential of technological innovation facilitates a general exploration of the principles of war themselves. And, while the ideas examined are complex, the narrative is clear and concise.

The author's devastating appraisal of current principles relies on understanding their origin and nature. Rather than disputing their validity in historical context, he artfully demonstrates why most are not principles at all and others are inadequate. Of the nine principles identified in Army doctrine (maneuver, offensive, mass, economy of force, objective, security, simplicity, surprise, and unity of command), only economy of force and surprise emerge largely unscathed.

Leonhard offers no magic solutions; he argues that none exist. Instead, he reduces a vast knowledge of military history to laws or categories of thinking. Three laws (humanity, economy, and duality) convey immutable truths that have governed military affairs throughout history. The law of humanity recognizes that warfare is basically a human activity; thus military thinkers must consider human nature in studying and practicing it. The law of economy states that resources are limited and commanders seek to meet conflicting demands within resource constraints. The law of duality demonstrates that human conflict has two aspects. This duality is readily apparent in the seven principles which Leonhard lays out.

The first principle, knowledge and ignorance, is independent since it affects the application of the others. Three groupings contain the remaining six: the principles of aggression (dislocation and confrontation, distribution and concentration) concern the intentions of friendly forces toward enemies in accomplishing a mission, the principles of interaction (opportunity and reaction, activity and security) address the interplay between friendly and enemy forces, and the principles of control (option acceleration and objective, command and anarchy) address management of friendly forces.

These principles suggest areas to consider but don't offer solutions. Instead, they reflect opposite sides of the same coin and emphasize the need for balance. They contribute to military science by providing an appreciation of central truths and new ways to think about warfare. The practical application of these truths will prove useful to the operational art.

This book should provoke informed debate over the definition and use of the principles of war. Anyone interested in military affairs and changes introduced by the information age will learn a good deal from reading and pondering it. **JFQ**

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